

# AVIATION WEEK

SEPT. 22, 1947

INCORPORATING AVIATION AND AVIATION NEWS A MCGRAW-HILL PUBLICATION



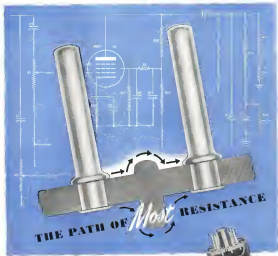
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# THE AVIATION WEEK

**PROBING POLICY**—In the dark-paneled auditorium of the Department of Commerce, the President's Air Policy Commission has opened public hearings. Behind the four men (Henry Ford II absent), high on the wall, is inscribed: "on land and sea the keenest of man's commercial enterprises have tracked the progress of civilization."

The commission wary of the moment in a line of commerce that was barely envisioned some 20 years ago when the building was erected and those words inscribed. The witnesses in the first week of hearings represented the airlines.

Their testimony has been variations on a theoretical proposition: "One representative pleaded for the Government to build transports and lease them to the airlines, another argued that proposal contradicted the principle of free enterprise, but that the gain should now be closed to further expansion; a third at one point seemed to state there are not enough airlines."

In another part of Washington, another group, whose interest also is in air transport, began meeting. Their sympathies are not with the story heard by the Air Policy Commission. For they represent the unaffiliated cargo carrier.

**BACKS TO WALL**—Their point centers a what they will tell this week to the commission. "They considered that outlook is not bright. The certificated carrier's 12-cent per ton-mile rate puts the cargo carrier's backs against the wall. This is the demise stage of a hot-ditch fight."

Already several large lines have curtailed operations. With the forthcoming merger of Slick and California Eastern, only Slick and Flying Tigers will be carrying on a high level of activity.

**NICE QUESTION**—Hearing and reading the airlines' statements to the commission, the pointed question among friends of the strictly cargo carrier is, how can the certificated lines do it? The 12-cent per ton-mile rate is far below the rate for both passenger and mail.

With the certificated carrier asking increased mail pay at one answer to their financial difficulties, the cargo people come to the conclusion that the federal Government is being asked to underwrite a cargo rate war.

The policy commission may not be the only showcase of the unaffiliated cargo carrier, Air Freight Forwarder Association, in a CAB brief, has already hinted at anti-trust charges against Air Cargo, Inc., the creature of the certificated line.

Officially, the Department of Justice is "aware of the situation."

The freight carrier feel they must have some relief and fast.

**THE JUDGES**—They take their case immediately to a small white-wood table placed almost in the middle of that air-conditioned room in the Commerce building. Across the table, from left to right as the witness sits it, sits E. Parker Hoyt, referee, publisher; Young George P. Baker, referee, and certain CAB member, proponent of most of the technical operating questions; chairman Thomas K. Prickett, trying with his spectacles as his snatching questions probe behind the witness' formal statements; and general's lieutenant Arthur D. Whitcomb, just sitting and listening to financial problems that must not be unfamiliar to the head of Pan Am Roadster. The chair at the end of the table should be occupied this week by Henry Ford II, the missing member.

This week those men also begin to hear the story of the manufacturing industry, with the lightplane producer looking off. If truly descriptive of the situation, that testimony could not be encouraging. But the commission can find a brighter picture.

**WRIGHT'S OUTLOOK**—It is in the address delivered in London by CAA Administrator T. P. Wright. He holds out to CAA's earlier forecast of a five-fold increase by 1955 over last year's 75,000 personal plane sales.

Catch, though, is there must be an improved, cheaper plane. No plane now in production or contemplated meets all of Wright's ideal characteristics, particularly price—about \$4,900 for a four-place plane with approximately 200 hp.

Wright starts such a plane is a possibility if manufacturing costs can be brought down. Manufacturers appearing before the commission probably will agree, but like business men all over the country, can see no drop in production costs in the offing.

**AT THE CAPITOL**—While the commission sees, as approach to the main problem of air policy get under way at the other end of the city, in the aviation sub-committee room of the Senate Office building across the street from the Capitol. The Joint Congressional Board organized and elected Murray's Sen. Owen Brewster chairman.

The approach might be different than that of the group in the Commerce Building. Brewster indicated the chosen instrument issue, brooked off by the President's Commission, might be considered, although two of his members objected.

At the close of the first day of public activity for the two air policy boards they found at least one common meeting ground—a joint dinner at the Mayflower Hotel.

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## NEWS DIGEST

### DOMESTIC

Paul K. Biddle, who resigned last April as executive vice president of TWA, has been elected president and chairman of the board of TACA Airways, S. A., which is now controlled by Western Shipyards Corp. Samuel J. Johnson, formerly president of Northeast Airlines and now head of Atlantic Airlines, was named a TACA director.

Boeing Aircraft Corp.'s model 47B helicopter was approved for contract night flying by the CAA following a comprehensive flight test program. Conventional navigation lights, red and green, are located on either side of the cabin and a 250 candlepower headlight is mounted on the nose.

Such Airways reportedly is working out final details for shipment of California Eastern Airways, transcontinental route 142342.

Col Luke Blesh was elected a director and vice president in charge of sales of Lockheed Aircraft Service, Inc.

An Transport Command's "Stratocruiser," formerly Douglas C-54 Skymaster now atop Washington California flight, was placed in line for immediate flight, against big 7,250,000 price bid without a percentage accident of any kind.

Robert Dewey, commander for operations of Illinois was named secretary of the 15th annual NAA National Aviation Clinic.

Paul D. Niles, chief traffic executive of Great Airways died in Dallas, Texas.

### FINANCIAL

United Aircraft Corp. reports a profit of \$3,406,373 after federal taxes for the first half of 1947 on shipments worth \$97,834,181. Backlog on June 30 was approximately \$35,260,000.

Patco Appliances Co. shows net earnings of \$129,935 for first year ending June 30, compared to a loss of \$795,121 in previous year. Working capital increased during the year to \$4,077,212 and net worth to \$6,577,773.

### FOREIGN

Australian Navy has established an air arm and is purchasing two light aircraft carriers from the British navy.

International Air Express shipments in July increased 35 percent over the same month last year.

Canadian Department of External Affairs has approved the sale of 116 twin engine Duffell-Dowd Mosquito light bombers to the Chinese government. RCAF has delivered about 500 of the type so far. Canada is seeking payment in U. S. dollars.



## THE STRATOCRUISER SPREADS ITS WINGS

Boeing's great new Stratocruiser is making every minute in their paving flights over the Pacific Northwest.

With less noise power than any aircraft now in commercial service, three engines, twin-deck, greater than a cruising speed of 180 miles per hour. They soar along the higher skyways, where flight is smooth and weather free. And their complete air-conditioning, made possible by Boeing's research and its unequalled field experience in high-level flight,

keeps cabin pressures smooth and comfortable.

As soon as Civil Aeronautics Administration tests are completed, Stratocruiser deliveries to the airlines will begin. Meanwhile, more and more of the big, gleaming ships are moving onto the recently done.

Belittly designed and engineered—built with the same rugged dependability that distinguished the famous Boeing B-47 and B-50—the Stratocruiser has no rival in the transport field.

Already an forward looking airline has chosen Boeing Stratocruiser as the new type of their fleet. Among the airlines:

1. Continental passenger speed—precision and safety.
2. Republic flight characteristics and performance.
3. Increased early stage general aviation safety and equipment research.
4. Greater speed and greater cabin volume resulting in low operating cost.

PAN AMERICAN WORLD AIRWAYS

BOEINGWING AIRLINES SYSTEM

NORTHWEST AIRLINES

AMERICAN OVERSEAS AIRLINES

UNITED AIR LINES



OFFICIAL AIR in establishment of already existing Boeing Airspeed over the Pacific Northwest in the last few years in passenger research and development. Much of this has been made possible by having government purchase of all studies of B-50 to B-50-101.

**BOEING**  
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AVIATION WEEK, September 22, 1947

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"FROM COTTON TO CUTTER"

# AVIATION WEEK

SEPTEMBER 22, 1947

VOL. 47 • NO. 12

INCORPORATING AVIATION AND AVIATION NEWS



#### NEW NACA RESEARCH DIRECTOR SWORN IN

Dr. Hugh L. Dryden (left) being sworn in as Director of Aeronautical Research of the National Advisory Committee for Aeronautics by John F. Victory, NACA executive secretary. Dryden, former associate director of National Bureau of Standards, succeeds Dr. George W. Lewis, who held post for 27 years and is named NACA consultant. Dryden is noted for his wartime development of the B-47, Navy guided bomb and agent jet spraying (NACA photo)

or life passenger and cargo transport in 1947.

The transport planes would be in three main categories: movement of 5,000 to 12,000 lb payload capacity capable to feeder use, cost in the 20,000 to 30,000 lb payload class, and large ships capable of carrying 50,000 to 60,000 lb. Greater weight, land use, was for planes in the 20,000 to 30,000 lb category.

■ **Cargo Kinds Vary**—The ATA president notes that the future growth of an airline depends in great measure on the development of an efficient freight-carrying plane, but the airlines do not have the \$10,000,000 or more to underwrite the design and its work for the present. He added that the Fairchild Packet, built for the Army, is not completely adaptable to commercial use.

Members of the committee suggested that plane built primarily to military specifications would not be entirely suitable as airline service. ATA officials admitted the problem would have to be faced.

■ **South Dryden**—C. R. South and the president of the committee, William Lear, transport planes from the military service's recent pool is "a rather WPAish way of doing things."

He declared it would be unwise for the Army to get in the business of making planes and explained that the airlines should first exhaust private sources of financing before applying.

"We're still doing business in America in a private form, and the Army should not be put in a position of borrowing capital for the airlines or anyone else," South declared. Development costs of new-type equipment, especially cargo planes, can legitimately be borne by the Government and written off as a defense expense, he contended. But the airlines should first buy the cost needed, going to the Reconstruction Finance Corp. for a loan of necessity.

South emphasized that a 5,000-pound aircraft of transport is not necessarily the optimum size. "The smaller might be 3,000 or 4,000 lb." But the airlines themselves should not exceed their fleets beyond the point of gross losses.

■ **Some Features**—Lear advised that the earlier financial picture in 1947 probably will be a happy one, but he added that the Government, under the Civil Aeronautics Act, must safeguard the centers from bankruptcy of the companies' management in losses and failures. "He said the major problem of an airplane—the greatest technical safety in existence"—is readily apparent.

Competition is almost certain as soon

## Airlines Make Plea for Transport Plane Subsidies

ATA spokesmen tell President's Air Policy Commission federal-financed fleet of 3,000 to 5,000 transports needed.

By CHARLES ADAMS

The airlines have served notice on the President's Air Policy Commission that an important part of the cost of maintaining a large, modern commercial air transport fleet, easily convertible to military use in time of emergency, must be underwritten by the Federal Government as an investment in national defense.

Tuesday last week at the first public hearings by the commission, which will recommend an overall air policy for the U. S., revealed surprising disagreement from the Air Transport Association and its legal advisers, American Airlines, on just how far the Government must go in financing the airlines' future equipment

programs. E. S. Land, president of ATA, indicated the new transport equipment must lean heavily on federal funds for new planes, while C. S. South, American Air Lines' chief director, and James O'Connell should play the dominant role.

■ **Vice Presidents Agree**—With ATA vice presidents Robert Hensyberk and Milton Arnold in apparent agreement, Land suggested a government reserve of 5,000 to 5,500 transport planes financed as a defense project and built in accordance with military specifications but with value from the airlines. From the Government-owned reserve pool, the airlines would lease at many places in this needed to develop the largest part.

as routes and gates beyond the extent of the Civil Aeronautics Act. Laws are drafted. The act would have a maximum on one-way rates, and limits agent.

The two aviation clubs for modernization of CAA and CAB. Both suggested that the Civil Aeronautics Administration report to Congress. "I don't see how it can be done, but let's have all operating agencies in one place. Now you get different interpretations of the same regulation from the two agencies." The American Airlines executive said he does not favor establishment of a separate department of Transportation, but the Interstate Commerce Commission, CAB and the Marine Commission.

► **Report Progress**—Land use of the airport program is being covered not too slowly and is being hampered by "petrified officials." The also suggest need of more check-out stations on major transportation routes, passenger entering airports, early establishment of an airport port and control of all possible mail by air, prohibition of safety or economic regulations of air transportation by the states, and limitation of taxes.

VIA New Passenger Aircraft and lack of funds has been a major problem in building air traffic control and safety programs. It is added, however, that "even if we had all the money in the world we couldn't solve all our difficulties before the year 2000." Aircraft demand that transport planes today have many safety devices that are not defined.

The Civil Aeronautics Act, as written, was wholeheartedly endorsed by all air transport industry officials participating before policy recommendations. John E. Starr, chairman of the Board of American Overseas Airlines, and Corleto Feltner, president of Chicago & Southern Air Lines who followed Land use and in the same State also favored a maximum on one-way international route authority, but stated the domestic system should not be based on the one.

While stating that the Naval Air Transport Service and the Army Air Transport Command have a legitimate place in general, Starr declared they have an excellent opportunity that others. He said the use of air authority method to fill cargo space will be extremely available and continued ITC's subsidy of mail-bearing VFD air routes.

► **Attitude Shifts**—Starr disagreed with CAB Chairman James M. Lindsay's current statement that the trans-Atlantic carriers might end the year with a profit over \$100 million and pay. The NGA, however, said a study of comparable air traffic will have to be paid for itself.

Expressing confidence that the U.S. will win future competitors in plane development, Starr denounced the suggestion that Coast States might authorize flight ahead retroactively to the year future with get retroactive. He said he was not too pessimistic over the rate development of passenger air service as established on cargo.



#### CLOSEUP OF THOMPSON TROPHY WINNER

Cook (left) a single Lockheed FG-1 Comet, which averaged 396 mph. in his 300-mile course. Square wing top was Navy production version of the British carrier deck design. Pratt & Whitney R-4600/Douglas V-8 engine a fixed-wing high-speed variable prop. gross thrust 4,000 hp. Water is injected through injector into inlet manifold. Carburetor on intake extension along top of cooling nacress runs pressure over Navy fuel tanks. Cook has Lockheed FG-7C's were built. (Shown photo)

## Congress Air Group Goes Separate Way

Members of the past Congressional House-Senate Air Policy Committee last week unveiled proposals for a seven-man study panel at the formation of a new air policy.

After directing Sen. Dennis DeConcini (R, Ariz.) chairman, and Rep. Carl Albert (R, Calif.) vice chairman, the committee held a three-day session with George Kinn, chief of section of New Design, Washburn's seven-day policy planning committee. The Congressional Committee's line of attack, however, would be first, to gain light on the civilian's design policy, second, ascertain the military and civilian air transportation needed for support and implementation of foreign policy, and third, take into account consideration of specific problems involving various branches of the aviation industry. The six members of the joint Congressional group also discussed the role of the military, but gave little detail including data for four days and sessions are still under way.

► **Foreign Policy Key**—"The one aspect is duty this country should maintain," Stewart observed. "We had analysis with an aviation policy, and the only realistic way to proceed in making determinations on the nation's aviation is to find out something about what our foreign policy is to be."

Most things, Stewart published his second round of the war at chief of WTR's air war division, attacked the committee's air transportation's role in an advisory capacity, stating operations that he was opposed to a staff position. They agreed on both the short-term and long-term aviation program, however, conducted by DeConcini, supporting Stewart's proposal

reconstituted aviation company and increasing the number of transportation planes under the Joint Highways Company. Hal Drew, chief of Stewart's aviation subcommittee of Senate Interstate and Foreign Commerce Committee, is serving as acting secretary of the new congressional group. ► **Cooperation Fosters**—At Stewart's request the Congressional group held a Morrison Hotel dinner with the President's Air Policy Board, headed by Thomas Doolittle. Despite the pledge of cooperation which were repeatedly pointed out at the time, the Congressional group appear set to proceed independently, but would maintain link with the President's board on the grounds that it was possible of access to the aviation field.

## Freestone AAF Contract For Helicopter Cancelled

Termination of AAF contract for repair and development of the Freestone XR-14 Helicopter by Air Materiel Command, has resulted in the company's abandonment of development. The GA-41H prototype helicopter, powered with a 175 hp engine together with replacement parts, design and engineering data, are being sold for sale by Freestone Inc. of Billerica, Mass. Also, Prototype has been flying since March at the Willow Grove, Pa. plant, and has been assigned as one of the most promising new helicopter types. At 2,300 lb gross weight, actual performance figures show a top speed of 115 mph, 55 mph, maximum speed, 1,410 ft/min rate of climb, 900 ft/min vertical rate of climb, 14,000 ft service ceiling, and 4,100 ft altitude, low speed ceiling without ground effect. Like the earlier XR-18 Freestone helicopter, the GA-41H uses the large, oval rotor and tail rotor configurations.



#### MISSOURI'S SKYWAY 1

First state which to show the route of the new Skyway No. 1 for private flyers has been approved for Missouri by an State Division of Research and Development, aviation officials. The first phase construction at the 40-mile route will be the Skyway sub route, the state line from St. Louis, including construction, airports, navigational aids and equipment. The Missouri segment of Skyway No. 1 is on the southern portion of the route, which runs between Los Angeles and Washington, D.C., through and adjacent to the majority of the population centers of the nation.

## Skyway 1 Towns Pledge Air Cooperation to Survey Flyers

Local aviation interest in new route seen as key to success of proposed network; new skyways would be designed by CAA if plan works.

By ALEXANDER McDERMID

Enthusiasm acceptance given the Skyway No. 1 survey flight from Los Angeles to Washington, (Los Angeles, Tucson, El Paso, St. Joseph, Abilene, Wichita Falls, Oklahoma City from the East and West coast towns, Texas Plains, Indianapolis, Dayton, Columbus, and Pittsburgh) survey will be the first objective to obtain something about the proposed fastest flying aerial highway for private flyers.

How well the local pledges of assisting cooperation are being carried out, will be indicated in about 60 days, when two more flights of private flyers coverage on Oklahoma City from the East and West coast and intermediate points in "desert" of the one route. Data for the Oklahoma City route have been set for Nov. 25.

Presumably the new flight will quickly discover facilities where operators have not been set up, and will use aviation stations at those facilities to check up with the best in world private flyer service.

► **Utility Is Pledged**—Will Skyway No. 1, and other proposed non-military control flight routes, be the much-needed double-

line-one which will transform the present plane lines on airport planning to a one-country vehicle of economic utility. Analysis of the proposed route, and its Southern alternative which pass (Richmond, Va., Greenville, N.C., Spartanburg, S.C., Atlanta, Ga., Montgomery, Ala., Jackson, Miss., Knoxville, La., Dallas, and Ft. Worth) and connects at Abilene with the Western Skyway 1, shows that a very large percentage of the nation's capital wealth, population, and private flying market potential is within an hour's flight of one part of the route.

The Los Angeles Chamber of Commerce, and the Washington Field of Trade, express opinion of the new proposed route, compare it to the national highway and other transportation water roads which develop growth primarily on the west and less part, and will use aviation stations at those facilities to check up with the best in world private flyer service.

► **Utility Is Pledged**—Will Skyway No. 1, and other proposed non-military control flight routes, be the much-needed double-

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► **Development Item**—There appear a strong possibility that the present plan, no Skyway No. 1, can impact the historical development of the automobile along the national highway.

Recommending the original survey flight across the country, and covering the area all plan with its passengers and with private people in the other through which the survey flight passed, the state found virtually no objection to the basic operating plan, and to the requirements for better ground to transport plane which the survey plane must have.

A relatively small amount of opposition was based principally on two arguments: • **Assurance** as to the reliability of the route has been established and the state approval of the official Skyway 1 request by creating markers was opposed on the ground that it would be better to see funds for additional needed markers.

• **Assurance** along the route it was better to establish the survey markers to make possible point-to-point operation in any direction, starting from the survey method of determining flight along one or more specific routes.

In anticipation of these arguments developed one suggestion that facilities which had all study placed their station, might designate for survey route with the Skyway 1 mark on along its course, without putting one to be over market slowly placed.

The second argument was advanced to be the best developed way to provide air-station, but it is pointed out that this has been the method which has been advocated by aviation groups, including the Western States, Bluebird Flyers, and the CAA all-weather flying, for the last 15 years, with only maximum expense by many local communities.

The new business to be generated by local communities, by establishing community flying air stations, means passing through those cities as a far more attractive, and profitable investment to obtain private aviation than these routes.

Essentially, it is a minimum of 40 mile wide corridor route are reasonably marked, efforts will be made to be filled in before the national marking system will be completed.

► **At the present stage** these predictions appear in order. • **Success** of the whole survey program will depend in large measure on the success of the inaugural flights, the more and safety with which the first flight will secure the route, and the possibility of the other states where they stop its route. • **A Successful Skyway No. 1** would be followed by CAA designation of a number of other skyways, providing maximum other air routes which can be developed entirely in other parts of the nation.



## Boeing Stratofortress Bomber Heralds Transonic Combat

XB-47 features sweptback wing; unique mounting of six G-E jet engines and bicycle landing gear.

Boeing's XB-47 "Stratofortress" lands but does a low pass as it is swept back. By introducing the drag-increasing sweepback wing for the first time as a combat aircraft in this country, Boeing is pushing the envelope farthest airplane ever: the transonic speed regime and combat, the absence of obstacles over all previous jet bomber designs.

The 45-ton plane is powered by six General Electric J45 turbojet engines providing 14,000 lb. of thrust each. Aside from the sweptback aerial surface, the radial installation of these engines is its unique feature. Four engines are paired to nacelles suspended below the wing and the fuselage with the other engines located near the wings. The layout was dictated by the wing planform because of its sharp sweepback. It was necessary to mount the inboard engines well forward to avoid their wing sweep.

The low wing control a problem of providing lateral landing enough as the thin spars. By extending the other two jet engines

into the wing tips, the wing itself was made to carry their weight loads from crating an additional bending moment in the wing leading edge fittings.

► **Transonic Fuel Load**—The 2,000-mile range of the XB-47 is attained by what is described as a "transonic" fuel tank and contains indicates that approximately 15,000 gal. of jet fuel would be required to attain the range. Fuel may be taken from the fuselage or from the wing. The J45 engines use the J45 wing equally well as either. Fuel compartment is entirely within fuselage and contains four of the eight fuel tanks along the upper portion of the bomb bay to the rear wheel well.

Another power for the jet engines is provided by two batteries of new 1,000-ohm zinc nickel units mounted on each side of the fuselage just aft of the wing (Aeronautics News, Sept. 1). These units provide 15,000 ft. of thrust for 2.5 seconds for use during short or short landing approach in the final acceleration during flight.

► **Bicycle Gear-Landing Gear**—The XB-47 is a "bicycle" design similar to that used on the Martin XB-46 jet bomber. Heavy duty

steel wheels are mounted directly in the fuselage and are fully retractible, folding forward and up with down setting the gear bay after structure. The forward nose gear is retractible but cannot maneuvering. A retractible tail wheel of the B-29 type is mounted in the tail to provide positive protection for the tail in the event of a "bad down" landing. Small, cross-wheel type landing gear legs are hinged so each is retractible and can provide forward ground support during takeoff and landing. They carry no static load when the airplane is at rest and they retract forward into the jet engine nacelle and are sealed by down valves.

The XB-47 carries accommodations for three crew members: a navigator/loader in the nose, a pilot forward in the cockpit and a co-pilot/observer directly behind the pilot. The crew compartment is pressurized and the bubble canopy may be jettisoned in emergency with the pilot and co-pilot escaping by ejection seats. The thin lines and large tail fin of the plane best the aerodynamic of the interior and the crew is confined to the forward portion of the fuselage.

► **Large Bomber**—Bomb-bay is located in the center fuselage and is large enough to accommodate the U.S. 28,000 lb. bomb or four 10,000 lb. bombs without modification. Bombing is by radio control as a streamlined design directly under the nose. One command about a 3000-foot thrust command, but 3000 ft. maximum range mounted in the external bay. Radio-actuated gun firing equipment is controlled by the radio-actuated in the crew compartment forward.

Being jet propelled attention to the performance of low drag landing. How much the XB-47 through the use of a swept back along all surfaces assumed to have point of maximum thickness. The project consists of a thin airplane to fit in "can" simpler and lighter. This is followed by a point wing, leading and a lead smooth joint fairing. This project has been applied to the fuselage nose, wing and tail landing edge, engine nacelles and the engine supporting struts.

With a span of 135 ft. and a length of

205 ft., the XB-47 is approximately the size of a Douglas DC-6 transport, although weighing twice as much. The wing, its end mounted structure and swept back at an approximately 45 degree angle to achieve the adverse effect of compressibility as the speed of sound is approached. This reduced nose friction, but not forces on a converted B-57 by the NACA at Langley Field, Va., is expected to give the XB-47 a top speed of about 630 mph at 30,000 ft. Tests of XB-47 models in the Edwards 'Y' Area Memorial Laboratory wind tunnel at Boeing's Seattle plant showed the bomber capable of Mach number 0.97 below adverse drag effects normally associated with the tests. This would indicate a maximum speed of about 710 mph for the XB-47 as a jet, at about 60 mph short of the speed of sound which has not yet been achieved by an airplane.

► **Test Flight Plan**—The XB-47 has not yet been test flown and Boeing test pilots Robert Rollins and Scott Olson are not expected to make their first flight attempt until late in November. Engine run-up and ground tests will require about two weeks and other performance tests and extrapolations of the plane for the extensive flight test program will require the remainder of the year.

Boeing engineers believe that the new XB-47 represents an evolutionary break with traditional design as seen in the famed B-17 "Flying Fortress" which was built in 1935. Boeing and other leading powers of the new bomber will create new possibilities for the independent Air Force and their plan for an all jet striking wing by 1950.

## Idaho Editor Named President of AFA

Thomas G. Leach, Jr., Boise, Idaho senior engineer and an active managing editor of the Idaho Daily Statesman, was elected president of the Air Force Association of the West at its annual convention in San Francisco, Calif. He succeeds James H. Duffield, wartime commander of the 4th air force and now superintendent of the Shell Oil Co. Duffield was named chairman of the AFA board.

Other new AFA officers are: James E. Stewart, Hollywood, in V. F., Myrtle Beach, Weyburn, Neb., and V. F. C. Smith, Sacramento, Air Force Chaplain, San V. F. Paul H. Kessler, Portland, Neb., N. Y. C., treasurer.

## AVIATION CALENDAR

Sept. 24-25, 26—AIRCRAFT EXHIBITION, Dayton, Ohio.  
Sept. 24-25—AIRCRAFT EXHIBITION, San Diego, Calif.  
Sept. 24-25—AIRCRAFT EXHIBITION, Seattle, Wash.  
Sept. 24-25—AIRCRAFT EXHIBITION, San Francisco, Calif.  
Sept. 24-25—AIRCRAFT EXHIBITION, Los Angeles, Calif.  
Sept. 24-25—AIRCRAFT EXHIBITION, Phoenix, Ariz.  
Sept. 24-25—AIRCRAFT EXHIBITION, Dallas, Texas.  
Sept. 24-25—AIRCRAFT EXHIBITION, Houston, Texas.  
Sept. 24-25—AIRCRAFT EXHIBITION, New Orleans, La.  
Sept. 24-25—AIRCRAFT EXHIBITION, San Antonio, Texas.  
Sept. 24-25—AIRCRAFT EXHIBITION, San Diego, Calif.  
Sept. 24-25—AIRCRAFT EXHIBITION, San Francisco, Calif.

## INDUSTRY OBSERVER

► **Airlines** have begun experiments to boost gross weight of the early model Lockheed Constellation (C-59) from the current 93,000 lb. to 100,000 lb. Plans are being made to take a strong stand against the proposed weight boost which is accompanied by substantial gross income that are not yet unambiguously by the airlines concerned.

► **State Department** approved the release of seven German scientists now in the U. S. for the work with private industry but at a price that is higher than the usual release of scientists. Industries in this country German scientists will be allowed to engage in work if they can find American industrial backing.

► **May** is negotiating with Cessna Aircraft on a production contract for 30 F300R1 (Prairie) jet airplanes.

► **Look** to CAA to approve U. S. airlines' use of modified DC-3's (military version of IL-2) in the following cities below the Red Sea: Cairo, Beirut, Damascus, Baghdad, Ankara, Istanbul, London, Stockholm, Copenhagen, Stockholm, Frankfurt, A-34, Oslo, Rangoon and Manila.

► **Northrop Aircraft's** TB-45 eight jet flying wing bomber was put through two tests and two tests test work, and should be ready to fly first test flight within two weeks. A Wright Field flight instructor board completed examination of the bomber Sept. 15. The jet bomber will be flown out of Northrop's factory field and then to Marine Army Air Base at Mojave Desert.

► **French** initiated national industry in working on a new jet bomber (S.O. 4000) powered by two Rolls-Royce Neos engines and designed in a top speed of about 550 mph. Annet VD-70, French jet research plane has been completed and is awaiting test flight.

► **First Canadian-built** biplane has been built at Dorval Airport, Montreal. It was designed by Ronald Smyth and Selma Gottlieb of New York. It has a four blade main rotor and is owned by Jeuneux Air Line Co.

► **First Argentine jet** plane, the "Puma" built at the Argentine government aircraft plant in Cordoba has been flown. It has a span of 35 ft., a length of 31 ft. 8 in. and weighs 7,800 lb. It is powered by a Rolls-Royce Dartlet turbojet engine of 3,000 hp static thrust.

► **New** has been proposed with British Mustang engine and British engine industry. Many other jet types. Many options and experiments have been carried out with licensed AAF North American F-81 nose blower.

► **Martin** team, former vice president of Bendix Helicopter Co., is now developing a new type helicopter of his own design in accordance with Timmer, Washington.

► **Air Force** has completed design work on new 200 hp engine capacity transport capable of operating out of mud fields. The cargo compartment is 12 ft. high, 15 ft. wide and 30 ft. long and will carry an M24 machine tank. It will have many loading facilities and flexible type landing gear.

► **Glenn** L. Martin Co. has delivered seven AM-100 biplane bombers to the Navy Air Force base. These are now stationed at Patuxent, Md., Quantico Field (R. 3), Philadelphia and Jacksonville, Calif. The latter for radio range and aircraft tests. About 30 production AM-100s are in various stages of assembly and final completion will be sent to the Atlantic fleet for carrier service.

► **Recent** production to Martin B-26 bomber transports in operation on NATS routes between California and Hawaii include the modification of fuselage and nose wheel position in the passenger compartments and a water tank for handling rain air conditioning system.

► **AAF** is developing two gliders, one of 4 tons and one of 1 ton useful load. The latter will have a cargo compartment 30 ft. long, 8 ft. 6 in. wide and 5 ft. high.





Visually characterist ground view of Döblich Aircraft Constructors' Show at Radlett Airfield

## London Sees New Aircraft Types at Show

New machines added since last show total 27; radio guided missile also exhibited.

Great Britain's annual September air show at Radlett, 15 miles north of London, showed aircraft better than the best in any other and represents modern speed advances and brightness, personnel and accurate air craft, and fast fighters.

Rolls Royce showed the "Nene" and "Dartmouth" jets of the type which had been purchased in quantity by various governments. The "Sheffield's" "Golden" power plant of the Vixen jet fighter and its larger counterpart the "Ghost" which will power the DF1 106, 130 mph turbojet-powered jet car, were also displayed.

Lucasair Exhibitions—Planes shown at and fights included Lucasair powered with both "Nene" and "Ghost" engines, Lerocle powered by the Bristol "Tiger" turbo-prop, Vickers (Canadian unit) which which replaces C-47's, DH Dove, Bristol Whistler and Fawcett, and Miles Mustang.

New planes which were their first public appearance were Miles Mischukovian, and the Angered Antrim—The latter jet in detail was the various important Fairey radio-guided missile.

Altogether there were 73 types of aircraft shown and of this number 27 were new machines since last year's exhibition. In addition there were some 131 static items of engines, instruments, propellers and similar items open to public view.



BELYUSHIN 18 JOINS SOVIET PLANES

First picture of the Belyushin 18, now received over Russia aircraft which suits 47. This is only one of a new type the Soviet Union is putting into service over their 75,000 miles of air space.

## Report by Swiss Air Reflects Line's Growth

GENEVA—Swiss Air's expansion report, just published for the first half of 1947, indicates constant progression of the company's activities although two special flights to the U. S. last May are not included.

During the first six months of the year, 2,201 flights were made, against 1,871 in 1946. Number of kilometers flown was 1,635,894 against 1,375,303, and passengers transported 32,747, compared with 25,256. Cargo accounted for 135,779 kilograms last year to 105,736 for the 1947 period. Mail and baggage also showed increase.

Regularity rate was 83.66 percent against 79.5 percent in 1946, the slight decrease due to bad weather conditions at the first three months of this year. (On most days, landings were prohibited at most European airports.)

To improve its service to the future and open new lines to other European countries, Swiss Air Corp.—equipped at present mainly with Douglas DC-3s—ordered four Cessna 240s from Cessna Aircraft Works, Wichita, Kan. for delivery in the spring of 1948.

## Communication Bills Approved by Argentina

BUENOS AIRES.—The Argentine Senate has approved and sent to the President for his requested signature bills authorizing an amount of \$550,000 (U. S.) for purchase of private and mixed-traffic radio-communication as well as \$4,400,000 (U. S.) for the improvement, expansion and operation of the equipment.



LANGUEBOC PRODUCTION LINE

Finalist shop of Sud-Est, France, now producing the "Languebec" four engine aircraft for Europa use. Powered by four Gnome-Rhone engines, the plane has a cruising speed of 230 mph with full load of 13 passengers, five crewmen, and a ton of cargo. The Languebec is in use on Paris-Lyon routes.

## British Reversing Early Trend Toward 100 Percent Jet Power

Gas turbines rejected for reciprocating engines on two specific aircraft; Americans see end of piston power.

By F. F. BREWSTER

LONDON—One of the furthest-reaching decisions ever made in the skies of gas turbine and reciprocating engines highlighted the Anglo-American Association's Council one here and resulted in several significant decisions.

John Masfield, Ministry of Civil Aviation's director of long-range planning, declared the British are not going 100 percent to gas turbines. In two new turboprop engines specifically rejected as unfit for piston engines. Gas-turbine engines for use on small plane (possibly the Miles Mustang), designed to be able to use both types of power, have been rejected in full for reciprocating engine only. Another plane not to be fitted for the piston (possibly following in the footsteps) to be built designed principally around reciprocating power.

Ray Wright, Wright Aeronautical Corp. stated his firm has decided not to peak development of reciprocating engines above the piston stage.

These policies came to light during gas engine discussions that followed the presen-

tation of the final paper of the conference. The "Propeller Turbine (and Engine)" by F. M. Owen, chief engineer of Bristol.

Arranged jointly by the Institute of the Aeronautical Sciences and the Royal Aeronautical Society, the meeting was attended by nearly 50 leading U. S. aviation ground men headed by Preston S. Egan, president of the I.A.S., and representing aircraft and engine builders, Navy, Army and Air Force, G.A., NACA, and numerous research units.

The Professor Handley Page, president of the A.A.E.S., presided over the conference, which attracted nearly 100 British delegates and 200 American from the industry, the service, and the various government departments.

John an Alderman-Airline contracts aims to meet the greatly increased demands of postwar aviation was singled out for special attention, with the two leading papers devoted to transatlantic construction one by Nicholas J. Hill, professor of structural engineering, Princeton University of Drexler, in "The World Manufacturer"

the other by Dr. E. Williams, of the Royal Aircraft Establishment, Farnborough, on "Structural Properties of Structural Wings." Structural Problems of Large Aircraft" was discussed by H. Korvick, director and chief designer of Douglas Co., Ltd., and A. E. Raymond, vice president, engineering of Douglas Aircraft Co., Inc., in relation to "Some Aspects of Transport Aircraft Development."

Heliocopter was treated in two papers, one on "Power Plant Installation" by Bill Aeschly was president, engineering, Bell Aircraft Co., the other on "Rotor Systems and Control Problems," by Donald A. Campbell, Bell Aircraft Co., chief helicopter designer, Royal Holloway.

American estimates of the possibilities of an expanding piston aircraft market were contributed by Gordon Lowrey of NACA in a paper on "The Performance of Economies of Present Aircraft" and by G.A. I. P. Wright an earlier paper entitled "Forward Aircraft—An American Appraisal."

Specific contributions in greater engineering efficiency and safety were discussed in two new American papers "Wing Problems," by the Scientists of NACA's flight population research laboratory, and "Engine Instrumentation and Control of Aircraft" by Martin Eberhart, of Sherman Fairchild and Associates.

Assessing progress on both sides of the ocean was well revealed in papers by Dr. Thomas van Kesteren, chief of the U. S. Army Air Development Command, discussing "Theoretical Considerations of High Speed Stability and Control," by M. S. Miquel of the R.A.E., on "Control on Low-Speed Flight," by Dr. Clark B. Millikan, acting director of the Donald Gluggen, Army Aeronautical Laboratory at Goddard, discussing "Technique, who presented results of "High Speed Working in the South Sea Conference Cooperative Wind Tunnel," by W. C. A. Fawcett, director of the R.A.E., who discussed "High Speed Performance," and by Robert S. Gilchrist of NACA's Langley Memorial Aeronautical Laboratory, who presented "NACA's Wing Flow Tests."

Professor Handley Page's keynote address was treated in specific arrangements problems was treated in papers on "Modern Operational Factors Affecting Airworthiness" by the British Ministry of Supply's E. T. Spencer and P. A. Holman, and on "Design Problems Affecting Basic Development," by William A. Stewart, chief aeronautical engineer, E. J. Richards, who conducted much of the experimental work carried out by the British on various aircraft work collaboration at the National Physical Laboratory before the present V.A. treaty.

All of these topics provided extensive data, but one more significant than that

Following Owen's speaking which was presided by Donald M. Hawk, Allison, a director of engineering, who (in effect) outlined the lead of the piston rings as a paper discussing "Warren Allowing the Piston Development of Reciprocating Engines" and A. Glen Eklart, Rolls-Royce's chief engineer, who showed how "Turbo Engine Long Problems" are being faced.

Owen, whose company builds both reciprocating and turbo-prop engines, pointed out the certain advantages or performance afforded by the turbo-prop engine. One engine was in the stage between 518 and 519 mph. He stressed that its future development is based on the improvement of its thermal efficiency, with consequent reduction in fuel consumption.

► **Discussion: Vapors**—The discussion which followed Mr. Owen's presentation may be regarded as typical of the spirit which permeated the whole conference. Dr. H. Kuehnle-Claes, director of the Ministry of Supply's research on turbo-prop exhausts, and Air Commodore Frank White, one to defend the qualifications of their own jet project, the straight jet or "ducted fan" engine, especially its capacity (which the turbo-prop has) of developing some thrust quickly when needed, or in idling or in being brought, as well as its great thermal efficiency, 30 percent more than by 51 percent.

Then followed a survey of both sides, both both sides of the straight jet, the pros and cons of the ducted and the centrifugal compressors, the opportunity for exploring engine reactions given with the straight jet (2:1 instead of a high as 10:1 for the turbo-prop), the greater ease of maintenance which the ducted engine would have, and the need of the director of a rocketing propeller.

► **News: Heliobronch**, Bristol's greatest success, recently defended his design and told in the thought that it would be well not to forget any engine or engine combination which is being made. He said that the chief designer R. S. Stifford related that propeller loading was not likely to be a possibility with a turbo-prop engine because of the slow revolutions of gas turbine. Being reminded that his own turbo-prop has a strong cut for the turbo-prop as an outfall which are considered by its use and test.

E. S. Thompson of General Electric announced Bristol's thought that it was wrong to push turbo-prop into civil aircraft this year, and that their program might not be expected to undergo the additional development period as is now indicated. He anticipated here that his own company preferred to concentrate in the civilian period as a development program for a year or two toward the ultimate goal of a year or more with a turbo-prop. J. F. Wright has made clear that G.E.'s attitude was G.A. policy also.

After a host of points had been asked as detailed effect design, the possibility of reducing drag by smaller diameter, and as the chance between improving fuel or

## Boeing Adds Workers

Boeing Aircraft Co. is hiring new employees in its Seattle Wash. plant at the rate of 200 a week.

The work will continue through four weeks and early October, when it will drop to approximately 150 for one week and then to 100 weekly for an unspecified period, according to Len Hansen personnel manager. Total employment before the start of the hiring campaign approximated 12,500.

Spurring efforts and increased employment was necessary to handle the work ahead. This work includes the construction of 115 B-50s for the Army, the lead of which is now being made, three YC-77As and one Y7B Strato-lifter, also for the Army, 55 Stratocruisers, the first of which now is undergoing test flights and the X-57, an experimental turbo-prop bomber.

Delivery of the Stratocruisers is expected to begin late this year, and the Army's first jet bomber, the Army's G-1, also in a production order, the 57As, the largest remains of the active plane.

danger efficiency or concentrating on blade cooling. Manifestly made his statement regarding each policy on jet.

He explained this decision a partly because of the lack of flexibility of power jet engines, which is a necessary requirement for air forces that have still need significantly of their own jet engine (located) by the problem of stacking an existing landing platform, or at delayed aircraft, both of which result from the present limitations of air traffic control.

He also said the decision was also in air closing works. Mr. Owen's estimate in reference to the British to attend another similar offer in London, as soon as it could be conveniently arranged, of which the decision would begin at the meeting could be expected. Mr. Penberth, while accepting with clarity on behalf of the British, pointed out generally that it might only be possible to hold such a conference ahead in England's site on New York harbor, if the British could not accept any compromise to present the British delegates on land.

## Borrowing Halted

Boeing Helicopters, Inc. has abandoned its attempt to borrow \$175,000 at a 5 percent interest from its stockholders due to the latter's lack of response. The firm is now negotiating for the sale of a building in which it has a \$235,000 equity to obtain the desired working capital.

The firm has reported a net loss of \$67,572 in May 51 on net sales of \$941,458.

## Luke Harris Joins Lockheed Service

Col. Luke Harris has been elected vice president in charge of sales at Lockheed Aircraft Service, Inc. He also became a member of the Board of Directors.

Harris brings to his post with the experience and overall organization years of experience as senior engineering. He was an Army Pilot in World War I and from 1920 to 1927 was connected with the aircraft service. Later he was engineering and maintenance executive with National Air Transport, Lexington Airline, American Airlines and Capital Airlines.

During World War II, Harris was chief of engineering and maintenance for Air Transport Command. He returned as vice president of Capital, then assigned to head Luke Harris Industries, Inc., the portion he had in Lockheed Service. His last quarters will be at Burbank.

In other personal action

► **Henry King elected A. B. White** was president of the last year with Henry King, formerly having been president of G. F. Burgess Laboratories, of California.

► **Public Service Corp. re-elected** Prop. Edwards was re-elected as president of the Public Service Corp. of California.

► **Woolworth Electric Corp. named** Dr. E. C. Hawk president of the electric department of Woolworth Electric Co. He has been with the company since 1920.

► **Allen-Barnes Manufacturing Co.** elected Herbert B. Park to the board of directors.



## SURFACE PROTECTION

Northrup Aircraft Division is shown putting an attempt to make plastic coating from 200-150 which is the most flying wing fuselage is prepared for test flight. Some skilled men from this meeting of pure aluminum in a corrosion protection, oxidation caused by toughness and took care during test spots. Work and parts plus other design had assembly and ground tests from workers, age, future test methods, and flight test when it is only exposed to heat.

**NEW!**  
**SELF-LOCKING**

*Nylon Cap  
Anchor Nut*

**UNAFFECTED BY  
GASOLINE\***



—The Red Elastic Cap and Collar is molded in one piece to prevent LIQUID SEEPAGE!

Gasoline cannot seep past the built-in collar and the 3/16" wing collar. The second cap-developer is equipped with ESNA's new development in self-locking, self-collaring nut—the Nylon Cap Nut.

The nylon cap and collar is molded in one piece. It is impervious to the chemical action of gasoline and many other fluids. The cap protects and seals the end of the bolt against liquid penetration. The Red Elastic Collar seals the rear end of the bolt directly against the nut. In other Elastic Cap Nut sizes the bolt may depress a built-in collar on the other. This crowding action produces a compressive, seal-

ing force against both the cap and the collar ends of the bolt threads. . . . This means a full thread contact and a dependably tight liquid seal.

Here again the nylon Elastic Cap Nut provides dependable protection against the strain, Thermal Expansion, Thermal Emission and Liquid Seepage. ESNA's experience and research are always at the disposal of the visiting engineer. For more details about ESNA Nylon Cap Nut in sizes, than list, check, square and another types, address: Elastic Cap Nut Corporation of America, 1411-15, New Jersey Sales Engineers and Distributors in principal cities.

The RED COLLAR AND CAP  
developed an ESNA product

It is impervious and depends upon the fact that the cap and collar are molded in one piece to prevent liquid seepage. The cap protects and seals the end of the bolt against liquid penetration. The Red Elastic Collar seals the rear end of the bolt directly against the nut. In other Elastic Cap Nut sizes the bolt may depress a built-in collar on the other. This crowding action produces a compressive, seal-

ing force against both the cap and the collar ends of the bolt threads.

**ESNA**

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Long-range planning and research preceded the world's first successful powered flight by the Wright Brothers on December 17, 1903 in a Wright plane with a Wright engine... preceded, too, the first official flight ever recorded in the United States... made in 1908 in a plane designed, powered and piloted by Glenn Curtiss.

In the same pioneering spirit of these great founders of modern aviation... but with far greater research and experimental facilities at their command... Curtiss-Wright engineers evolved airplanes, engines and propellers that are among the very combat thrusts in the world during the war... and today fly on many leading commercial airlines.

Today, continuing research and development at Curtiss-Wright are evolving planes, engines and propellers that will keep the names Curtiss and Wright prominent in aviation as they have for 44 years.

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AVIATION WEEK, September 22, 1947

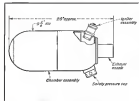


Fig. 1 First 1,000 lb. thrust jet

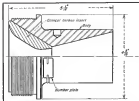


Fig. 2 Conical exhaust nozzle

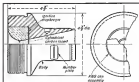


Fig. 3 Cylindrical exhaust nozzle

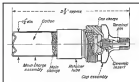


Fig. 4 Scaled igniter

## Lightplane JATO Seen in Rocket Design

Development of these auxiliary units, suitable for small craft, has reached stage of high refinement. Researchers seek means of further lowering cost.

The continued refinement of JATO units for application to light aircraft as well as to military and cargo versions is today an important research phase in the expanding field of assisted takeoff. Latest research developments are a prelude to the design and production and maintenance processes in this activity.

The JATO motor, now being produced in large quantities by Aerojet Engineering Corp. for EAA's, began its useful development eight years ago at Cal Tech's Jet Propulsion Laboratory. There in '39 jet propulsion research (jet engine) was initiated to perform basic studies into rocket field. Experiments were conducted into both liquid and solid propellant rockets. First application, a small motor delivering 25 lb thrust for 12 sec., was fabricated from tubing with propellant charge cast in place.

About that time aircraft assisted takeoff units were begun to appear. In Aug. '40, six of these motors were attached to an airplane and several takeoffs made successfully.

These tests have demonstrated pos-

sibility of auxiliary jet propulsion for aircraft.

Next solid motor design delivered 200 lb thrust for 2 sec., and used a potassium perchlorate-calcium perchlorate mixture. Design development of this unit, work was also progressing on liquid propellant rockets, and culminated in a 1,000 lb thrust motor for Douglas A-19.

Early Development—An accident resulted in a motor designed by Aerojet's W. L. Egbert to guide missile launchers of Army aircraft, success in the production of these small units led to development of larger thrust motors.

First 1,000 lb thrust design was built around stainless steel tubing (Fig. 1). Nozzle was mounted on contractor of test, but igniter and safety assembly was shifted to one side. Weight was 5 sec. duration. Tests were made in '44, and first production order from Navy was the delivery into service.

Corrosion—Moisture—Temperature range of safe operation had been a problem. At low temperatures, difference in thermal expansion coefficients of charge and chamber wall led to cracks between charge and case, or

poor joint was one of burning, grain cut as process. The charge, like any liquid, became brittle at low temperatures, and would break up from shock of igniter. At high temperatures, charge would flow when motor was placed on its side, spreading additional area to burning. These conditions led to "blow" of safety diaphragms and, occasionally, the chamber.

To solve these difficulties and such a safe operating temperature range of 8 to 130 deg F, modifications in both charge formulation and method of supporting it within chamber were proposed. Modifications in propellant motor allowed a zinc-plated charge at low temperatures while maintaining physical strength at high temperatures. Catalyst was not proposed in solution in holding charge within chamber. Charge was to be completed outside of chamber, in better position, and protected from.

Chamber design finally chosen on basis of availability, ease of construction, availability of facilities, and low cost-in relation

ally that and today. It consists of a body fabricated from 51 O.D. X .251 wall steel with steel tubing with 90,000 psi max. yield strength. All closures made by casting or spinning, except the filler closures, are welded to accessible seals, gaskets, and safety assembly. Mounting legs on the welded. Modified taper buttons thrust a cap on forward end of chamber, and mating female thread is cut in a sleeve, depending on, welded to the body.

Chamber design relies on bond area consideration of operating pressure, safety release pressure, hydrostatic proof pressure, thrust loads, and seal loads.

► **Pressure Considerations**—Operating pressure is determined from test results. For any propellant, stress can be obtained for equilibrium between pressure against area ratio and lower bearing rate. Thrust of motor is related to equilibrium pressure by equation:  $F = P \times C_1 \times A$ ,  $(P = \text{chamber pressure, } C_1 = \text{force constant, } A = \text{thrust nozzle throat area})$ ,  $C_2$ , if known, for any given rate of burning permits to cut pressure, in any case when curve, pressure can be designed from this equation. The desirable flow rate can be obtained from the burning rate curve. After operating pressure has been obtained for fill charge  $P$ , the variation in operating pressure with charge temperature can be estimated.

Minimum operating pressure is less than operating safety pressure because of the surge in velocity, depending upon stage of development of jet. Minimum safety release pressure must be above max. operating temperature to assure that gas pressure peaks will not rupture seal during flight.

Each seal is hydrostatically proof tested above the max. expected operating pressure. Only caution for the pressure at that strength of metal at peak temperature should be considered in calculating gas pressure, so that joint will be in tensile or compressive operation at max. safety release pressure with seal at temperature.

► **Nozzle Design**—JATO motor components have evolved through considerable development. JATO nozzles were originally made from solid copper. Design had to cope with copper solution to shock load transmitted to nozzle during test. Later, materials made for satisfactory test performance, but joint would which would resist some resistance of temperature and erosion. Various erosion materials were tried without success. A tungsten-carbide nozzle failed by cracking under thrust shock. Coated nozzle never performed. Tungsten carbide graphite was held in a steel body, was tried and operated successfully for 30 sec. at a 1,800 psi thrust motor (Fig. 3).

But steel nozzle was unsatisfactory. Failures occurred just downstream of throat at this region of velocity. This region is considered least hot here, under pressure, must would be forced into steel case and steel material would then be driven into con-

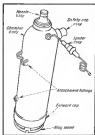


Fig. 3 Complete cartridge motor

pression. Due to thrust augmentation of steel and velocity in cone angles on cone cut, carbon chipped away at all edge. The failure also did not affect performance of test, but backing of carbon nozzle passed forward part thrust, causing a drop in thrust curve. The type of failure was characterized by oblique or general cylindrical neck nozzle (Fig. 3). In this design the thin carbon section at aft edge of nozzle was eliminated, and after an extensive proof test program, was incorporated in the motor.

Other failures due to copper degradation held in place by carbon nozzle, and KNS built up over exhaust end of nozzle. Cap over end of nozzle, protects against the plugging from charge during storage and handling, it removed just prior to firing.

► **Igniter Problems**—Main problem in development of JATO igniter fell into two classic mechanical developments, and charge charge development.

Igniter of first 1,800 lb. thrust JATO motor was patented after that test in 1941. It was soon apparent that the igniter was inadequate. Regardless of system size, size, type of nozzle, nozzle were common, and low pressure Nozzle nozzle igniter occurred.

Analysis of problem indicated that the igniter which provided both hot and just size in chamber would be most desirable. Elimination of these difficulties led to present igniter design. Igniter tip nozzle was replaced with the black powder sealed nozzle condenser with safety gasket, and outside pellets was replaced with Mercur powder. Results with this design have been excellent, and igniter is safe and sure.

While problem in charge design were being solved, simultaneous changes in igniter were being perfected. Main problem was introduction of modified electrical circuit through a wall which had to be sealed against temperature and pressure.

Original design consisted of two gas ports into a turbine motor which was passed into steel cap. Plug was arranged to mate with a threaded A inert nozzle, reducing resistance was not reduced by loose fit on shoulder side of seal. Failure occurred in which entire nozzle would be blown out.

Regular spike plug found less for next type. Although the solved problem of seal, withdrawal of leads and the protection of the fragile position head of plug was not satisfactory. The present triple gas igniter (Fig. 4) was then proposed and developed. In the next a single positive lead wire is used and resistance was not reduced in four pounds. In some cases occurred to ground. Airplane propeller being provided between JATO motor and airplane mounting leg. Critical assembly procedure involving a 1,500 psi. gas tank test, is necessary to insure proper operation.

► **Heavy Release**—This fits remaining hole provided for attachments at end of motor. It is critical so that sufficient escape area is provided in event of abnormal pressure rise. Multiple member will not crack in fracture of chamber walls. Throat is cast single, consisting of a copper depletion of steel thickness as to fail at a predetermined pressure, a retaining cap which withdraws thrust from escaping gas and catches firing parts, and an adapter which fits through seal, and thrust into hole. Disruptive area is not lost from hot gas by a new element parts released by air stream.

► **Propellant Charge**—Present cartridge test incorporates results of thrust test and flight on different charges. First development was incorporated use of various types of composites—metal, plastic, and rubber—as resins, for example, and led to conclusion that top-secured units offered most advantages because of low tendency to separate charge and liner at low temperatures.

Charge design has been complicated by using an aluminum plug into forward end of charge, and supporting cartridge from steel base to the plug and attached to forward cap with nut.

The two part envelope motor is as present form (Fig. 5) represents a high step of refinement as application propellant charge. One normal operating temperature range will withstand three times acceleration of 12g in any direction.

► **Water Trade**—Simplification is in process of JATO motors. These will be a single box at aft end of motor to accommodate valve line on an air surrounded by two actuators and an safety discharge.

Experience gained in development of JATO motors is now being incorporated in a part of 12 sec. duration with 250 lb. thrust. This motor weighing about 10 lb. is an application to light aircraft.

It is worth noting that propellant charge containers, design of metal parts will proceed toward more efficient features, lighter weight, and lower cost. Beyond the losses has the standard JATO motor.

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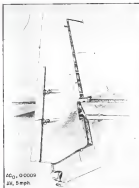
Inherently light, strong, compact, FEATHER-WEIGHT all-aluminum oil coolers resist the extremes of temperature, pressure, vibration and shock which frequently cause oil cooler failures. Inquiries concerning FEATHER-WEIGHT oil coolers are invited. Clifford Manufacturing Company, 541 E. First Street, Boston 27, Massachusetts. Offices in Chicago, Detroit, Los Angeles.

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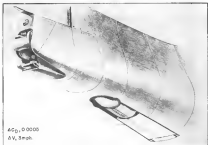
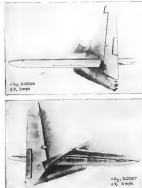
ALL-ALUMINUM OIL COOLERS

HYDRAULICALLY-FORMED BELLOWS



Increases in drag were measured when gaps and seal joints between fin and fuselage were measured from gap on horizontal and vertical tail surfaces of these aircraft. To reduce this drag, lightening holes in area of fin part of tail should be noted, gaps between fin and fuselage are filled with seal or possible, tail leading sealed at rear bulkhead.

Removal of seal and fitting from opening at tail wheel seal creates bulk on the plane increased drag coefficient by 0.0009. This amount is largely result of leakage through these openings. Drag of this installation can be reduced by external fairing and sealing at front of tail wheel well.



## Searching Drag Studies Check Speed Impeders

Investigation of tail installations show importance of sealing gaps and bulkheads.

Part VII



# BUTLER BUILT

By G. E. PAUL

## Refuelers



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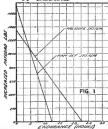


FIG. 1



FIG. 3

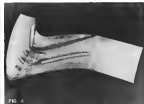


FIG. 4

## Jet Rotors Point to 'Copter Payload Gain

Engineers emphasize larger loads for short duration flights, do not consider operating costs prohibitive. Noise may restrict use in congested areas.

After some years of research both here and abroad, the practical application of jet rotor propulsion now appears to be within the grasp of U. S. helicopter designers.

In fact, it is so close that rotor tests at a jet rotor developed at Vance, Cal., by McDonnell Aircraft Co., for the propulsion laboratory of Air Materiel Command at Wright Field, had engineers of that firm to airplane engineering payload gains for flights of relatively brief duration.

Systems Command—Using as a base for comparison a conventional helicopter such as the Sikorski HO 4, grossing 4000 lbs., they have charted (Fig. 1) in terms of endurance the payload increases that might be

expected of both a jet rotor and a jet rotor power system.

It will be seen that the jet rotor system offers, for one hour of flight, a 750 lb. payload gain over the conventional helicopter, while equipment of the machine with a jet rotor system offers, with 15-min. endurance, a payload bonus of 1800 lbs.

Chiefed Rotors, project engineer on the McDonnell jet rotor project and an Army contract, feels that performance indications of the graph exceed slightly actual results of wheel tests with the jet rotor.

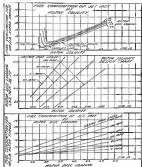
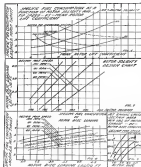
He feels, however, that these performance gains are within reach and agrees with Curtis D. Duany, McDonnell's chief heli-

copter engineer, that both rotors are maintaining in their effort of steep payload increase for operational helicopter work requiring flights of short duration.

► **Space-limited**—Duany says his immediate field of work for the jet helicopter. In military use it could transport heavy equipment short distances in the field, spin road gaps, bridges, and so on.

► **Costly**—The jet rotor project and its Army contract, feels that performance indications of the graph exceed slightly actual results of wheel tests with the jet rotor.

The engineers concede that jet helicopter operating costs will be higher than those



of the conventional type, even for their endurance, due to greater fuel consumption. But they believe this greater cost will be an "insignificant factor" in considering the return from increased payload.

Since of their approval and calculation is a 20 ft. pressure rotor (Fig. 2) of Max speed design developed during the past two years and used to provide the Army with data on effects of viscosity on rpm, lift, fuel consumption, and angle of attack.

► **Blade Details**—The altered blades were constructed by Glenn H. Co., which also has provided blades for the Sikorski HO 4's helicopters.

The two-blade McDonnell rotor conducts through the hub a 135 fadum system over a set of pulleys of 17 diameters that is increased by constant lines to a 2.1 pressure area (20 sq in.) at the lower end.

At the blade extremity (Fig. 3) it mounted the "water," an aerodynamically shaped rotor hubber weighing approximately five pounds.

The oblique photograph of the burner (Fig. 4) shows the fuel ducting of the fuel mixture through an igniter preheated three times per second.

► **It should be noted that the three gear structure** between short of the shaft will of the fuel (downward the leading edge) provides a small, smooth turning channel whereby a high-speed boundary layer flows along the burner chamber wall in which is mounted an igniter preheating. The high velocity boundary layer was caught at the point as a protective against dust flame hot of the particles of the chamber that otherwise would

surface, long based in the aerodynamic shortening of the tip structure.

At its forward end, the spreading of the burner chamber boundary layer worked the well, and it was found to be impossible to quote the machine with the spreading in the burner shown. Actually, so the wheel test stand, the burner is ignited by secondary ionization of a subsonic jet of spark gap area the burner orifice.

► **Fast Pickup**—Using standard, standard pumps, each burner pumps 60 ft. of fuel, and a has been provided to reach full starting speed, approximately 125 rpm, in as short a time as ten seconds.

The test rotor produces 1000 hp (about 2400 at a tip speed of 600 ft./min).

Configuration of the rotor actually is such that it gives an absolute stability level of 1000 rpm to 1000 rpm. The blades spin uniformly from a rest speed of 100 rpm to a tip speed of 7.5 x as fast as a high-speed NACA 67 rotor which starts which pressure operation at a maximum by speed without experiencing compressibility drag.

A further technique to achieve the latter condition is seen in the forward angle of the blade tip to a maximum of 30 deg at its extremity.

► **Advances**—The jet rotor is an advanced type of rotor, and thus structure is a semi-monoplane type permitting a high ratio of internal blade area to its external area.

► **In tests conducted to date** the blades have been whirled at angles ranging from 4 to 12 deg and without any attempt to intro-

duce cyclic action that would have had no bearing upon this angle.

While an engine here has made of the advance of cyclic blade angle changes upon the performance of a rotor at attached to a helicopter rotor, blade angle changes do not intercept that may progressively reduce the incidence of combustion will cause. They say that in tests of large gas jet rotors mounted at the wing tips of aircraft a yaw of 5 deg brought no appreciable loss of power although it always showed to some extent the random yawing of fuel and air in the diffusion chamber.

► **Current Machine Sued**—To date the only jet helicopter to reveal that actually has flown is the German Dohler machine, now under flight test at Wright Field, which employs the present system.

► **McDonnell engineers** expect that the German helicopter shows a low order of efficiency and they believe that their own West Coast experiments and comparable research by other designers throughout the country will lead to early production of a U. S. jet prototype that should prove to be highly successful.

► **Obviously, the advantages of the jet rotor jet helicopter are several.** In the single rotor design torque is obtained and work at the root of an auxiliary tail rotor. The present jet system requires only a relatively small piston engine or gas turbine to operate as its compressor to feed an axial turbine to the burner tip. Rotor speed can be adjusted with ease and there is no need for the bulky and heavy variable speed transmission required to accomplish this in the conventional helicopter. These all add up to a saving in







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## British Will Make Landgraf Helicopter

### Fifth Helicopters, Ltd. of London gets foreign manufacturing and sales rights.

Both manufacturer and title of a low-price modification of the Landgraf helicopter is retained, and immediate production is scheduled to be under way within a year.

At Los Angeles, James S. Reichle, vice president of Landgraf Helicopter Co., told *Aerospace Week* that Fifth Helicopters, Ltd., London, has made a "no frills" payment for foreign manufacturing and sales rights.

► **Five Countries**—Landgraf customers assume that as quickly as the British group complete conversion of Landgraf's specific need to fabric manufacturing capabilities of a first rate will look to be followed by an all-out prototype of a production machine.

Richard A. Fifth, head of the British company and former chief technical officer for British Air Commission's service area, has indicated that he expects will make revenue out of a response that it is "different than those used in the United States."

► **Consider Production**—Under the prompt aid of British interest and sales such that has enabled him to believe much of the costs of this type of British experiments with all-wood aircraft model. First were based on a conventional assembly a Landgraf one in considerable production of the helicopter for the domestic market. This will require adjusting of the compressor and stock conditions to new between two and three million dollars. Landgraf's present planning points toward a five-place all-wood production model.

Currently the West Coast company is occupied with Army contracts for jobs and research, and also is fabricating the original five in experimental fabric models. Both the first and second were damaged in successive years by failures following take-off tests. In the first a hole was two inches from the hub and in the second a wire broke in the landing gear. Both models in service without other than engine maintenance discrepancies, and reports that British made in date have shown the design to have excellent stability and ease of control.

► **Five is expected to arrive within two months.** In the meantime the Landgraf Co. is conducting an extensive vibration analysis of the rotor assembly in all attitudes and conditions of flight. Although the experimental model returns its usual rotor constant, speed, there are no restrictions to overcome models designed in the previous flight failures. Speed and flying speed will have the great load factor to the length of the rotor, tested at 45 deg., which was done in the past.

## NEW AVIATION PRODUCTS

## Information Tips

Details on Deposition and Release. Use of necessary on the subject of this and other matters. In general, they are defined in this issue. For general information, see "Deposition Case," 10100 Ave. Lincoln 2, N. Y. 27.

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**Classical Post from Metal.** Formulated out of metal without using any other materials. The new series of mailboxes is presented by Registered Agents. This is the first time for the industry. The new series of mailboxes is presented by Registered Agents. This is the first time for the industry.

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Widened Develops Release

**New-Style Battery.** Development of new aircraft battery has been announced by Widened Storage Battery Co., Cleveland. Approved by CAA for its reliability in civil aircraft without enclosed battery bins or compartments, battery is made up of patented vent manufacturing process and is protected against overcharging and explosion of electrolyte which will permit to permit battery design. The 10-lb. battery is available in two standard sizes, smaller battery, which has 20 amp. capacity and weighs only 21 1/2 lb., is now in use in small planes with output by 100 hp. Second type has 36 amp. for capacity for larger planes. Both batteries meet all size, weight, and performance standards already established for personal aircraft batteries by National Standards Committee. Installation without need battery bin simplifies requirements and space maintenance work, and automatic hold-down cradle permits fitting in any make personal plane. Battery uses wet electrolyte. Because it flexes on launch take completely outside aircraft, eliminating fire risk all airplane maintenance. Many a valuable product, because it flexes on launch take completely outside aircraft, eliminating fire risk all airplane maintenance. Many a valuable product, because it flexes on launch take completely outside aircraft, eliminating fire risk all airplane maintenance.

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New Steam Classes



Antenna Available

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# AVIATION SALES & SERVICE

## T. P. Wright Sees Price Drop For Personal Planes by 1955

Longrange prediction anticipates five-fold production growth for family aircraft in next eight years despite short-term trend variations.

By ALEXANDER M'SURELY

A five-fold increase in personal plane production and sales by 1955 over the 1946 production of 33,000 aircraft, an agreement reached by T. P. Wright, Administrator of Civil Aeronautics, after a careful appraisal of aerial and production factors. Growing at a faster rate than general plane sales are in the field, with most prospect for marked improvement in the immediate future, the Administrator's latest report regards the present slump as a short-term variation of trend which will be overcome by a combination of improved plane design, and lower plane prices made possible by better production engineering.

**Strong Forecasting.**—Considering the high accuracy of Mr. Wright's previous aviation forecasts and the factors he cites in making his new appraisal, the production boom as a strong encouragement to a thriving and successful personal plane industry.

Two years ago Administrator Wright made essentially the same longrange forecast. He was not so certain to change it now, despite the sudden production and sales boom of 1946 and the equally sudden market drop which began late in 1946 and has continued through to the present time.

"The 1946 sales of personal aircraft was a little out of scale with the real average trend, as purchases were made by people who had been prevented from building their dream by the war," the Administrator points out. "Slightly overvalued high operating rates coupled with the above have brought about a considerable decrease in sales this year, as indicated was to be expected. Even with a drop of sales in 1947 and 1948, requirements figures will still be substantially above the long range forecast line of growth, and as the average production should fall along the curve downward."

**Characteristics Remained.**—Characteristics which he believes will be incorporated into the personal plane in order to assure the safety which will assure the growth of the new sales are summarized as follows:

• **Size and Arrangement.**—Five place with adequate baggage space. Gross weight of

2,100-2,200 lbs. Empty weight of 1,150 to 1,200 lbs. Low wing arrangement, possibly a pusher. Unrestricted pilot view at all times. Approximately 200 hp. Turbine landing gear.

• **Performance.**—150 mph cruising speed, 200 mph climb rate of climb maximum.

• **Safety.**—Non-reversing spinning characteristic (either nose-up or nose-down recovery), optional low control, stall warning device, flap operation characteristics reduced, simplified engine and propeller controls.

• **Special Equipment.**—Low electrical and structural noise level, radio receiver and transmitter, easy access to equipment, cancellation of wing gust interference—propeller, rotating wheels for improved landing.

Given such characteristics, Administrator Wright expects that the personal plane will have ability to attract a large market and thereby permit production to rise. He believes that an efficient, reliable airplane at this stage would be a long forward step in aviation.

**Increases Figure.**—Study of available market indicators that there are approximately 1,000,000 families in the U. S. with an income of \$17,500 a year or more. There are also more than a million families possessing two automobiles. Annual sales of various optional features are approximately \$60,000. This figure can be used as a criterion of the market of approximately 150,000 planes a year by 1955.

"This would put the price of the four place airplane at around \$4,500 to \$5,000, or an average price of around \$4,500 which would be approximately three times that of today's latest model plane."

• **Cost Decrease.**—Operating costs of the personal plane are also expected to decrease by these means.

• **Expenses.**—Operating costs to be 25 percent of the total cost will automatically drop, due to reduction in initial price, and approved design for increased life of the plane.

• **Insurance costs** of about the same percentage will drop due to reduced cost of



the plane to be served, improved safety and other standard factors.

• **Range.**—Storage which means about 15 percent of present total costs will be lowered by design innovations such as folding or retractable wings.

• **Maintenance and engine costs** were about 15 percent, will likewise be reduced by design improvements, such as reduction in type costs, and increased safety.

• **Fuel** and all costs are expected to remain unchanged.

• **Planes** with good neighbor features such as low noise level, and increased safety will make possible increased use of domestic airports, and there will be made possible an increase in use by wide adoption of the crosswind cutting landing gear.



**CLEVELAND'S NEW AIRPORT**  
Cleveland's newest airport, proving ready access to the downtown business district, was opened for business recently. Photo shows opening of taxiway to the field.

## ADMA Group Urges Inventory Control Plan

New recommendations include different system of symbols for marking stock.

Facilities for maintaining stock on hand of inventory by various distributors have been recommended by Aviation Distribution and Manufacturers Association by R. D. Heit, Commercial Mission Aviation service manager, and chairman of the ADMA committee on inventory control and adjustment.

Recommended procedure, which can be used by ADMA membership is one method outlined.

**Manufacturer.** At intervals of not less than one year will submit form distribution complete statement listing of inventory, and use listing periodically in a program to remove overstocked items from distributor's stock transferring them to other stocks where needed.

**Manufacturer Will Immediately** notify distributor parts or items which through engineering changes or manufacturing defects are no longer suitable for original installation. Distributor shall stand on lot of the aircraft since possibly on certificate's request. Manufacturer will have option to replace these obsolete parts immediately with suitable parts or to make other agreement in accordance with distributor's contract.

**Manufacturer Will Use** the report and notes in marking lot parts, to assist in preventing losses to distributors as a result of price changes.

**Distributor Will Keep** inventory record permitting accurate and prompt accounts.

lots of complete inventory status, including part name, to be made available to manufacturer on request.

**Manufacturers of Products** which lead themselves to this project, will provide distribution with an annual coded list of inventory, various parts including correct usage with following symbols recommended for universal usage.

**Marked for best selling** essential stock. Demand for stock falling unseasonably slow.

**Dot** for current stock with varying demand depending on location and modulus. White Square for slow moving stock. Black Square for varying time.

**Circle** for obsolete stock no longer available on current catalog.

**Arrow pointing up** with other symbol to denote classification of item improvement, or pointing down to indicate classification wrong.

**Distributor and Manufacturer** will cooperate in clearing inventory information and arrive agreement, working closely to prevent price gains for both.

**Each** committee recommended that procedures if adopted be considered by all aircraft manufacturers and distributors whether they are members of ADMA or whether they are not.

## Exempt in Oregon

Payment of firm for aircraft registration in case of personal use or plane, according to an opinion by Attorney General George Nester of Oregon. Registration and licensing of airplanes are held to be in the same category as automobiles, which are exempt from personal tax in Oregon.

## Bell Helicopters Dues Locusts in Argentina

A Buenos Aires helicopter operator, Tullio Antonio de la Repentinista, (TAR) has just taken delivery on the last two of an order of 11 Bell helicopters, which are being used to dust poison on locusts which are plaguing an Argentine crop.

C. I. Tappert, TAR's technical director reports that on helicopters are already operating against the locusts and that these obtain an average 500 gals. per service. The Argentine department of agriculture, according to the TAR representative, is convinced about the new success of eradicating the locust plague which last year cost more than \$15,000,000 damage to the crop and more, and which attacks all types of vegetation over at least 50 percent of the Argentine area for as much as several months of each year.

A commercial version of ducto-rotorcraft is used to dust the locusts and the helicopter flies over at 5000 ft. The locusts remain during the night part of the day in the helicopters. The locusts being in the North and it is planned to attack their breeding areas with helicopter dusting early next year.

Tappert described a typical locust roost as 20 to 300 ft. deep, several miles long and several miles wide, often as thick that it forms a cloud over the sea.

## Allison Speaks At CAA Region Meeting

John Allison, vice President Secretary of Commerce for Av, was principal speaker at the second annual regional conference of the Civil Aeronautics Administration at the Edinboro Hotel, Edinboro, Pa., Sept. 16, 17 and 18. Purpose of the conference was to give non-licensed operators and private pilots an opportunity to air their views to CAA representatives.

In addition to Allison, prominent aviation leaders of private aviation status including M. E. Thompson, governor of Georgia, was present. The proceedings included numerous reports by governmental agencies and a number of constructive national recommendations to CAA study.

## Flight Strips for Farmers

The Flying Farmers of Oregon, in annual convention at Corvallis, recommended that flight strips be provided at points convenient to agricultural equipment rental and field test strips which are necessary of various agricultural operations. Representatives recommended the state board of aeronautics for its program of marking aerial airports. Farmers were urged to state their own fields for the problem of flies. More than 100 farmers from their own planes to the convention.

The city of San Diego may take on joint operation with the Navy of the latter's newly Miramar field...

San Diego's latest passenger traffic would increase to be handled at its Lauchlin Field, except what beyond all other traffic would be diverted to Miramar...

Shops Are Added

Aviation Division, S. A. Lang Co., Inc., Wichita, in addition to its Wichita distribution of aircraft supplies...

Operating CMA approved upon station No. 270, the division operates its complete maintenance service including a modern paint shop...

Export department of the local regional team is prepared to furnish all types of aircraft parts to customer specifications...

Pipeline Patrol

Interstate Oil Pipe Line Co. has found an unusual spot and started inquiry as a result of both the case and the Agri Pipe Line Co.'s line through Oklahoma...

North Dakota Pilot Fee

Annual pilot registration fee of \$1 will be moved against North Dakota pilots, the North Dakota Aviation Commission has announced...

BRIEFING FOR DEALERS AND DISTRIBUTORS

ACFA NOTES-TWIF indication pointing to a membership of about 60,000 in 1947...

GOOD CUSTOMER RELATIONS-Scott Aircraft Co.'s letter to business owners...

FAET 60 REVISION-The modern flight crew has been the bad accident reason...

RIGHT HAND PATTERNING-CASA's suggested airport marking plan, now carrying nine kinds of runway markings to define repeat marker colors...

PARKE COMPLAINT-A letter from an NATA member complaining about the lack of cooperation by some plane manufacturers...

ADMA GUIDE SHEET-Aviation Distributor and Manufacturer Association is planning an official standards guide...

-ALEXANDER MALOSKEY

FINANCIAL

Atlas Corp. Control of Convair Shows Interesting Implications

Some feel move is attempt to liquidate Convair; more likely move stems from feeling that profit in aircraft industry will rise.

A number of interesting implications are noted Atlas Corp.'s acquisition of control of Consolidated Vultures aviation development...

As of June 30, 1947, Atlas owned 100, 71.49 percent of Consolidated's outstanding common stock...

At present time, Atlas owns 37,570 shares of America's common stock or about 4 percent of the entire issue...

Among Atlas' other interests are substantial holdings in New York Shipbuilding Co., one of its oldest corporations...

At present time, Atlas Corp. owns 57,570 shares of America's common stock or about 4 percent of the entire issue...

in the form of dividends. It has been repeatedly estimated that aircraft assets have been very reluctant to make large capital distributions...

Some observers believed that Atlas Corp. was attempting to liquidate Convair and profit at this moment...

# THE RUHR— VALLEY OF DECISION

**F**OR AMERICANS and for American business the most important single spot on earth today is the Ruhr Valley of Germany—a valley no bigger in area than the State of Rhode Island. Upon recovery in the Ruhr hinges recovery in Europe. Upon recovery in Europe hinges the peace of the world.

No machine can run with its most important part missing. Western Europe without the Ruhr is a dead machine. Before the war, over half the coal and steel produced in the Western part of Continental Europe came from this one little valley. Today, the fact is that no other region in Europe has the technical skills and enterprise to produce the industrial supplies which Europe must have if it is to help itself back to a self-supporting economy. And, after observing Europe for many weeks, I am convinced that no one but the United States can successfully supervise the rebuilding of the Ruhr.

If you will keep four considerations in mind, as the international politicians gamble, you can easily tell whether the United States is playing its proper role in the rehabilitation of the Ruhr. Here are the four considerations:

**I. We are paying for the Ruhr rehabilitation (or the lack of it).**

**II. We alone have the skill and enterprise to supervise its rebuilding.**

**III. It will be a tough organizing job requiring money, hard work, and outright sacrifice on the part of management men and technicians.**

**IV. We had better do it well if we love our children.**

**I.** We are paying for rebuilding the Ruhr—or we soon shall be. The British now control the Ruhr, its government and its industry. They have been paying out about four hundred million dollars—American dollars—a year to buy the food, raw materials and equipment needed to rebuild the Ruhr. The British must spend American dollars for those supplies because the supplies can not be bought anywhere but in America. Thus far the British have, in effect, obtained the dollars which they spend for the Ruhr by draw-

ing them out of the \$1,750,000,000 loan which we granted Britain last year.

Now the loan is fast running out. The British lack dollars and other assets. We must take over, directly or indirectly, the dollar expenditures for rebuilding the Ruhr. We shall pay for it. Therefore—

**II.** We should supervise it. The British have been running the Ruhr's industry. They might conceivably suggest to Washington that they continue to run it while we pay the bill. That we should never agree to. There is a sound old rule that he who pays the paper shall call the tune.

Perhaps we would not need to invoke that rule if the British had done a good job reviving the industries of the Ruhr. They have done a poor job—physically and ideologically.

The physical output of the coal mines and steel mills of the Ruhr in recent months was actually smaller than at the first of the year. Production of coal amounts to little more than half of the pre-war 127 million tons per year. Steel production lags along at one-sixth of the pre-war rate—far below the volume permitted even under the present low level-of-industry plan for Germany.

Ideologically, the British Labor Government has tried to export to Germany the brand of socialism which is making such a dubious record at home. Foreign Minister Bevin—although he may now have misgivings about it—committed himself to nationalization of the Ruhr's coal and steel industries. British representatives have pushed hard to get General Luskus Clay, our able military governor in Berlin, to agree to socialization of the Ruhr. So far, he has resisted this pressure, but our State and War Departments and we as individuals must back him up to the limit if he is to continue to combat this pressure successfully.

Even if the British government were not socialist, there would be good reason for questioning the ability of Britain to rehabilitate the industries of the Ruhr. In recent generations, the British management class has shown itself more

interested in cartels, restricting output, and allocating markets, than in full-stem, ingenious enterprising production.

Certainly the British must remain full partners in the political administration of Germany. No one suggests anything else. However, their recent production record demands turning the job of revitalizing the Ruhr industries over to the nation which is paying the bill and which leads the world in production.

If we have any faith in the business philosophy by which we have lived and prospered for 170 years, we should demonstrate that that philosophy still is dynamic by taking up the burden of the Ruhr.

**III.** It will be a tough job. It will require men and supplies and money from the United States. It can not possibly be done in less than five years. A list of some of the necessary steps shows how hard it will be.

A. Plans for socializing the Ruhr should be shelved quickly. The industries there should remain in trusteeship for five years. Then the Germans themselves should decide their ownership; let us hope that by that time we can demonstrate to them that private ownership and private initiative mean high production, good distribution and high wages.

B. The top supervising management jobs—both the top policy and the top technical jobs—required outstanding business ability. That is why American business men must be willing to go to Germany, sacrificing comfort and leisure, and even income, if necessary.

C. Germans should take over the management job at the operating level. The Germans are good technicians. They have a greater incentive than anyone else for getting the Ruhr back in working order. That incentive should be increased.

D. Special effort should earn special rewards. There is nothing wrong with the Ruhr (or the rest of Europe) that hard work will not cure. Before a man will work hard, he must feel that his work will advance him and his family. That simple motive, which powers our whole economy, must be revived in the Ruhr. To revive it requires enormous ingenuity and work... a new currency... a logical customs union... a sensible ration system... enough food, clothing, housing and consumer goods so that the worker can buy something with his currency and his ration points.

E. America will have to furnish a good share of these foodstuffs and supplies. Certain key items

of equipment also will be needed. Only so we succeed to our job can this flow be diminished.

F. A sensible priorities system must channel Ruhr coal and steel into those uses which, in turn, will further increase output. Repair parts for railroad cars should stand high on the list. Housing, coal equipment and machine tool parts should come ahead of the automobiles and permanent steel bridges which at times have been accorded preference.

German technical management of industry in the Ruhr—point C above—need not mean political control of the Ruhr by some future sovereign German state. As the French know, the Ruhr, next to the atomic bomb, is the most dangerous weapon in the world. It is the arsenal without which no European power, even Russia, would dare start a war. There is no sense in turning that arsenal back to the political control of a nation which twice in 25 years used it for aggression. (And three times since 1870.) Surely we have enough resourcefulness to let the Germans who live in the Ruhr run the industries there without turning political control over to a central Prussian state.

This partial list shows how much hard work and statesmanship the United States must put into the Ruhr. But—

**IV.** We had better do it if we love our children. If we do not do this job—if we should pull out of Germany or fail there—we leave behind us a vacuum which neither Britain or France has the strength or ability to fill. Russia has the will and, if left unopposed, the power to fill that vacuum. Therefore, the day we fail or the day we pull out of Germany, the third world war takes a long step closer to us and certainly to our children. What greater incentive does any American need to work for than our success in this field?

If we succeed, the western areas of Germany in conjunction with Belgium and Holland can become self-supporting in three to five years. That way lies recovery for all Europe. That way lies peace for the world. That way lies vindication for the American business system in which we believe—the system of competitive private enterprise, with freedom for the individual and his initiative.



President McGraw-Hill Publishing Company, Inc.

# CAA APPROVES MARTIN 2-0-2 FOR AIRLINE SERVICE!

## First Deliveries Made to Northwest Airlines in August

MARTIN 2-0-2 approved by the Civil Aeronautics Administration . . . the recommendation of CAA's Type Certificate Board that the CAA Washington Office issue a type certificate for the 2-0-2 means that this advanced new airliner has been given the okay of the U. S. Government . . . that its great speed, comfort and dependability will be available to airline passengers now! Delivery of the first of Northwest Airlines' fleet of Martin 2-0-2's has been made. Deliveries to other leading North and South American airlines will follow soon.

### GIVES YOU MORE OF EVERYTHING!

First commercial airlines of completely new design, the Martin 2-0-2 gives you more of everything! More speed . . . they're 100 m.p.h. faster than the planes they replace! More comfort . . . with cloud-top air

riding seats, modern heating and cooling, more styling, more other luxury features. More dependability . . . with best anti-icing, flexible fuel tanks, automatic propeller feathering system, new highly efficient airlock, check-out in 15-20 min. or less. More economy . . . with ease of maintenance, low operating cost, higher payload and other features that make for profitable airline operation. As the world's leading twin-engine airliner, the Martin 2-0-2 gives you MORE OF EVERYTHING!

The Glenn L. Martin Company, Baltimore 3 Maryland

**Martin**  
AIRCRAFT

Divisions of Republic Aircraft Corporation



AVIATION WEEK, September 22, 1947

## AIR TRANSPORT



Detroit Airfreight Terminal Co., wholly owned by National Airfreight Forwarder, Inc., has opened new facilities at West County Airport containing 26,000 sq. ft. for cargo handling and office space plus 600 sq. ft. of cold storage area. The terminal will be open 24 hours a day, 7 days a week.

## Air Transport Industry Wages, Payrolls Climb to New Peaks

Average salary during second quarter of 1947 above figure for U. S. industry generally; about 86,000 persons employed by carriers.

By CHARLES ADAMS

Payroll of the U. S. air transport industry grew to record size during the first half of 1947 as new international operations and faster service helped offset retrofits made by some carriers because of high fuel costs.

Latest available statistics show that U. S. airlines, both international and domestic had an annual payroll of more than \$20,000,000 in the second quarter of 1947. The average annual payroll of air transport's 86,000 employees was about \$23,662, 31% of a week's earnings higher than the average for all U. S. industry.

**Domestic Figures** — Second domestic traffic data during the second quarter had an estimated 64,515 employees and aggregate annual payroll of about \$10,500,000.

U. S. flag carriers reported an estimated 22,447 employees and a total annual payroll of about \$75,425,000.

**Production Report**—Seven airlines are in the flying stage of operation with 1,217 airplanes and an aggregate payroll of \$3,900,000. Average annual salary was about \$2,832. Formerly of the 526, 11, 8 air transport air line paid by the American Airlines, according to reports filed with CAB. FAA's Atlanta Division paid as 3,400 employees an average of \$5,500 in second quarter 1947. FAA's Pacific-Northwest Division paid 3,038 employees an

average of \$3,718.

Among the domestic carriers, Colgan, which paid 517 employees an average of \$3,363 annually during the second quarter, was the leader. Also above the \$5,000 level were Continental, Eastern and TWA. United and Island, although in flying stage, also reported with CAB, had wage averages over \$3,000 during the first quarter, while American and Western, also both in flying stages, were close to \$3,000 in the first quarter.

**Delta Rate Paid**—Rate from general office, plus as the highest paid airline employees. Following closely behind are the flight engineers, mechanics, navigators and aircrews used largely in overseas operations.

Following wage scales, for a sampling of five carriers, show the approximate percentage of employee groups (including supervisors and assistants) during the second quarter of 1947:

**TWA**, domestic—799 pilots and navigators received an average annual salary of \$2,575, 75 flight engineers, communications officers, flight mechanics and navigators, \$6,994, 136 ground service employees (mechanics, crew leaders, cargo handlers, navigators, electricians, porters, purser, etc.), \$3,317 average; 121 ground communications operators, dispatchers and meteorologists, \$4,411 average; 244 stock and store employees, \$2,915, 461 stewards, stewardesses and other cabin attendants, \$2,087, 1,311 ticket agents and reservation personnel, \$2,826, and 1,267 mechanics, \$3,170.

**Pan American Airways**, Atlantic Division—246 pilots and co-pilots, \$7,733 average; annual salary; 268 flight engineers, communications officers, flight mechanics and navigators, \$6,060; 141 ground service employees, \$3,247, 130 ground communications operators, dispatchers and aircrews' agents, \$4,346; 377 stock and store employees, \$3,076; 119 stewards, stewardesses,

etc. \$1,295, 79 ticket agents and reservation clerks, \$2,993, 493 mechanics, \$3,528.

► **American Overseas**—159 pilots and copilots, \$7,275 average; 185 flight engineers, route maintenance mechanics or mechanics, \$6,291, 321 steno and stock employees, \$2,165, 351 ground service employees, \$2,218, 131 stewardesses, stenographers, \$2,233, 132 ticket agents and reservation personnel, \$1,512, 778 mechanics, \$3,710.

► **Eastern**—724 pilots and copilots, \$6,803, 339 ground service employees, \$2,650, 161 ground communications operators, radio-telephone operators, \$2,416, 161 steno and stock employees, \$2,815, 410 stewardesses, stenographers, etc., \$2,161, 1,318 ticket agents and reservation personnel, \$2,108, 1,647 mechanics, \$3,734.

► **Eastern**—176 pilots and copilots, \$5,913, 341 ground service employees, \$3,665, 144 stock and steno personnel, \$2,238, 220 stewardesses, stenographers, etc., \$1,851, 424 ticket agents and reservation personnel, \$1,977, 405 mechanics, \$2,998, and 78 communications operators, radio-telephone operators, \$2,977.

Total employees and average salary by carrier in second quarter 1947 (except for Eastern disclosed last quarter) are:

American (first quarter) 35,146 employees and \$2,903 average salary; Boeing 2,119 employees and \$2,275 average salary; Chicago & Southern (first quarter) 1,378 and \$2,196; Colonial, 317 and \$1,702; Continental, 660 and \$1,165; Delta, 1,681 and \$2,498; Eastern, 3,565 and \$2,128; Island (first quarter) 315 and \$1,217.

Mid-Continent, 1,861 and \$2,087; National, 1,799 and \$1,732; Northwest, 972 and \$1,772; Northwest, 1,601 and \$2,005; PCA, 5,773 and \$2,158; TWA, \$2,085; U.S. 9,842 and \$1,824; U.S. West (first quarter) 11,786 and \$1,872; Western (first quarter) 1,812 and \$2,026.

► **International Carriers**—American Overseas, 3,110 employees and \$5,146 average salary; Pan American Airways, 2,097 and \$5,208; Pan American Airways, 7,211 and \$5,666; PAA (Africa operations) 491 and \$4,252; PAA (ground service offices) 1,012 and \$3,247; Northstar, 204 and \$4,191; TWA (International) 1,375 and \$3,158.

Challenger, 124 and \$2,442; Frontier, 150 and \$2,574; Empire, 106 and \$1,241; Florida, 77 and \$3,714; Northwest, 126 and \$2,707; West Coast, 94 and \$3,416; and Midwest, 198 and \$2,774.

## UAL Mail Pay Bid

United Air Lines has asked CAB to raise its rates double its present mail rate of 45 cents a ton mile. The carrier told the board that the rate of \$1.90 a ton mile would be fair and reasonable. UAL has requested a rate which would allow the CAB public counsel had recommended that the rate be decreased.

## Traffic Gains

Dominic aviation news, which failed to measure up to the airlines' expectations during the early part of the summer, came back strongly in August and over the Labor Day week.

United Air Lines reported that passenger traffic during the Labor Day week was 18 percent greater than the year before and represented the heaviest volume of business it ever handled over a holiday period. The carrier's load factor during the two-day day was over 95 percent. United also announced that revenue passenger mileage for August was 14 percent over August, 1946, and 12 percent above July of this year.

## Cargo Progress Marks First Half Traffic Gains

Paul Rogers on traffic news and later on U. S. domestic and international operations in the first half of 1947 compared to the same 1946 period shows domestic air freight, which rose 213 percent, with the most spectacular jump.

The Air Transport Association reports domestic revenue passenger carried 14 per cent, revenue passenger miles 216 percent and plane miles 54 percent, while total tonnage was down 73 percent. Revenue passenger on U. S. international lines rose 34.4 percent, revenue passenger-miles 77.4 percent, revenue tonnage 412 percent, and 113.2 percent, and express and freight 118.9 percent.

The values carried 1,864,296 revenue passenger 1,031,576,860 revenue passenger-miles on the first six months of 1947 as domestic routes. Overseas and international operations by U. S. carriers in the same period amounted to 610,212 passenger and 79,110,820 revenue passenger miles.

Domestic operations have seen single-engine, 409 engines, and 362 four-engine planes in service over certified routes. International lines have 62 two-engine and 113 four-engine craft. ATA estimates that 527 planes will still be on order by U. S. carriers in August.

## Slack Would Fly Mail At 18 Cents a Ton Mile

Slack Airways last week attacked the Civil Aeronautics Board for its new 40-cent rate and said it would like to see the rate cut to 18 cents a ton mile for a fraction of the Air Force now being paid the regular carrier.

Members of the Independent Airflight Association are prepared to fly the mail over the existing routes at 18 cents a ton mile and will accept a 10-cent rate for passengers on the job, according to Ed P. Slack, president of Slack Airways and IAA. He attacked the four airlines—American, United, Western and PCA—which have not now freight tariffs with non-regular carriers to 12 cents a ton mile.

These same passenger carriers which plan to compete with the independent airfreight

lines at 12 cents a ton mile are being reported to CAB for a rate from the public treasury of \$1 a ton mile for carrying mail, Slack declared. (Slack recently asked for a 10-cent mail pay from 45 cents to \$1 a ton mile.) Through the Independent Airflight Association, Slack plans to take his fight against the airlines' "unreasonable" freight tariff to the President's Air Policy Commission this week.

Slack charged that American Airlines' cost for air cargo division last summer had to force the always expensive cost of haul ton with low tariffs, adding that this fact was not the principal industry headache of thousands of shippers and retailers in the absence of several routes.

## U. S. Transport Fleet Grows to 913 Planes

U. S. domestic and international airline fleets this doubled their total of transport planes in the two years 1945 and 1946. A recent total of 913 aircraft in operation on Aug. 15 of this year, compared to 440 as late as last August, ended on Aug. 14, 1945. Twenty-five planes were added between last June and Aug. 15 (Aviation Week, Aug. 6).

An Air Transport Association survey shows that four-engine aircraft accounted for 354 of the 473 plane increase in the two-year period. Largest single gain, for four-engine planes was in June, 1946, when 45 additional aircraft were put in service.

In domestic operations, the private sector added 246 planes but increased 100 percent. Starting with 151 planes left in service as January, 1946, the fleet now totals 317. The new aircraft that has been requisitioned for the military forces, the number of aircraft operated over intercontinental routes reached 156 by 'VJ Day and 736 by the middle of the last month.

U. S. international operations, which had 52 planes in August, 1945, increased that total 115 percent to 773 as the year nears close.

Domestic operations have seen single-engine, 409 engines, and 362 four-engine planes in service over certified routes. International lines have 62 two-engine and 113 four-engine craft. ATA estimates that 527 planes will still be on order by U. S. carriers in August.

## Air Truck Declines 12 Percent in Value

U. S. exports and imports of merchandise by air during June totaled \$21,400,000 and \$16,850,000, respectively, according to a release by the Federal Reserve Bank. The value is 16 percent in shipping weight above the May post-war peak of \$21,304,000 and \$16,500,000. The Commerce Department said principal exports by air during June were watches and clocks from Switzerland, and a decline of 42 percent in sewing apparel, machinery and household appliances.



## REMOVABLE CARGO COMPARTMENT

A highly flexible new interior arrangement added in such as 4,008 lb. of cargo capacity to each of its DC-4's has been adopted by Pan American Airways' Air Cargo Division. The unit is an example of a removable cargo compartment which can be installed quickly on the forward end of the passenger cabin when there is a low rate of passenger load. The DC-4 passenger DC-4 already has been fitted with the compartment and is being used on test runs. The cabin that is being installed normally, adding a total of more than 125,000 lb. to maximum cargo capacity of the DC-4, DC-4's flying the Latin American routes. The removable compartment blocks off the first two rows of seats, and a overhead cabin door is located at the rear of the cargo. Cost of the installation per city including paint, labor, and modification is \$2,210.

## Los Angeles Ready For Helicopter Mail

The nation's first certified helicopter mail service is scheduled to begin Oct. 1 when Los Angeles Airways inaugurates scheduled operations over two routes with Sikorsky H-19.

Three daily routes will be provided over a non-city-airport link from Los Angeles Air Port to Perris, South Pasadena, Alhambra, Monrovia, Glendale, Burbank, North Hollywood, Van Nuys and Santa Monica. At the same time, LAA helicopters are to inaugurate an hourly flight daily except Sundays between the airport and the roof of the terminal main post office in downtown Los Angeles.

Additional service—Service over a second route, south extending from the airport to near time to the city of Los Angeles is slated to begin Oct. 16 with further extension to be made later. The Post Office Department believes two million parcels will be handled by the helicopter system which should cut in 15 hours less the transit time of airmail delivered by or sent from Los Angeles.

Present equipment of Los Angeles Airways consists of two Sikorsky H-19's of approximately 750 lb. payload capacity. Two ships being a more of power flight will

work. A third H-19 is to be delivered Oct. 1 and a fourth about Nov. 1.

► **Sikorsky** President—in an effort to prevent public objection to low level flying, the Sikorsky air being equipped with engine cut-off and propeller brakes, and also being modified by installation of fuel jacks.

LAA's helicopters will not make five deliveries and pickups by lowering over or landing on the suburban post offices as now. The operations will be carried out by a pilot who will be required on the subside of each city.

► **Higher Costs**—Result of their landing area, routine of hours and proper maintenance and operation of the facilities will add considerably to original cost estimates. However, operations will be made with no fuel by dropping of mail bags into mail and work some form of landing, device for change so that the service can be carried out and expense borne by the carrier.

Established regular mail service will be served by the present, with all other services being postponed until more general post office service is made. The helicopter pilot initially will have two way radio communication with airport control towers only, but later a radio operator is expected to talk of post offices with the ships. Mail service will be entirely by day, with night flights started by commuter during the next several months. ► **Mail Pay**—United-Los Angeles Airways has asked CAB to set its temporary mail pay at

\$1.15 a revenue free mile without additional to base rate. This rate would not include payment for maintenance of development such as a fair profit, LAA report, adding that "operating results probably will justify substantially larger compensation than the temporary figure requested."

Low bid, LAA also requested an operating rate of 91 cents a mile, but increased payload, higher gasoline prices, taxes, maintenance and other items have forced an upward revision of offer from 25 percent. The company's policy, for example, will be paid \$130 a month instead of the \$420 a month originally contract.

## Higher Passenger Fares in Prospect

Fares of last Aug's 18 percent passers per fare increase to last next domestic carrier out of the rate has brought the prospect of a second hike in rates this fall.

Northwest Airlines this month has been the leader in a move to raise rates. Like other a carrier CAB permission to increase its rates 10 percent, at the same time providing for a 10 percent decrease on round-trip. B. O. Redwood, NWA's vice president in charge of traffic, says the company's rates are as low as possible after other carriers by other transportation services to meet the ever rising cost of airline operations.

► **Railroad Action**—The airline's position in CAB followed soon after the Interstate Commerce Commission completed the Pullman Company to raise its sleeping car rates up to 40 percent and authorized carriers' tariffs to meet competitive lines. Airline fare emergency authority is other rail and passenger rates.

Both with the proposed 10 percent increase in the last rate, a passenger still will be able to buy a round-trip ticket over NWA's domestic routes for 1 percent less than the present cost of last one-way ticket. If allowed to proceed out. He said the round-trip reduction policy would combine to that now as effect on Northwest's new rate to the Orient.

► **Rate Increase**—United Air Lines has been chosen in increasing passenger 5 cents a mile from 58 cents. UAL, Trans and W. A. Patterson believe the industry as a whole will have to pay in the more than using equipment at least one-way fare carriers to make yields while charging present rates.

In protest to the airlines' consideration of higher passenger fares as their proposals to increase freight rates (Aviation Week, Sept. 15), the CAB has asked for a rate increase of 10 percent. In addition, CAB and American in requesting plans for reducing rates to 12 cents a ton mile and 18 cents. The five carriers proposed 14 percent slack in airfreight rates would be cut by the 15 percent and 10 percent on other air and intercontinental freight Aug. 1.

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AMERICA'S TOP

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**Muhlfeld Appointed  
PAA Sales Manager**

John T. Muhlfeld, traffic manager of Pan American Airways Latin America Division for the past 15 months, has been appointed PAA's general sales manager.

In his new post, Muhlfeld will be administrative head of the company's U. S. sales office and will be functionally responsible for the development of sales within the U. S.



Previously, he was posted to Wileo C. Legrosch, vice president in charge of traffic and sales.

Appointed as a Justice Kelly in executive director of the United Kingdom and Europe, with headquarters in London, was also appointed by PAA.

Other industry developments:

**Air Transport Association**—Richard Bennett, United Air Lines executive vice president, said that certain divisions of the ATA public relations activity committee is advised & approved but was recently rejected from North Atlantic (NATA).

**Air France**—The airline announced that it will be named as a member of the IATA, which is establishing the North American division of the airline and will be.

**Alaska Airlines**—Robert W. Smith, vice president, said that the airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**British Overseas Airways**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**Continental Airlines**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**Eastern Air Lines**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**Northwest Airlines**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**Pan American Airways**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**Trans World Airlines**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**United States Airways**—The airline is planning to increase its fleet of Douglas DC-3s and will be operating in the near future.

**SHORTLINES**

**Av Transo-Plan**—Plans to air Constellation to the South Atlantic via to Brazil and Argentina this fall.

**American**—During the last week in August and the first week in September averaged 2,000 passengers a day and set of Oct 1950.

**American Airlines** & **Northwest**—In a record a 4-year safety certificate from the International Safety Council for being flown 151,301,518 passenger miles without an accident since temporary service in 1942. Company is a subsidiary of American Airlines.

**BOAC**—Is negotiating with Compaq Airlines (Europe, S. A., CAUSA) for the sale of its four Boeing 314 4-engine jets to the following European countries.

**British**—During July operated 14,919,418 revenue passenger miles, up 112,940 over June. July daylight set up 49 percent over June.

**Chicago & Southern**—We looked out on the first day of service into the new Chicago and Chicago route, commenced Sept 15. Look was good in C&S' Great Lakes Air division only this month.

**Continental**—Had a 500 percent performance record during August when an eight week annual record of eight consecutive months of on-time flights.

**Pan American**—Traffic hit an all-time high in the Alaska region during August. Alaska route of company was up 100 percent.

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## CAA-CAB—Over Regulation

Aviation industry leaders who appeared before the President's Air Policy Group last week outlined most of the problems of the airlines. At present time all of the air transport executives scheduled had not yet appeared before the commission, so that a complete summary of their testimony could not be completed.

C. R. Smith, chairman of the board of American Airlines, however, struck effectively at the confounding over regulation by our national Government. We hope that outstanding leaders of our aircraft manufacturing industry are as vocal on this subject. The nation's press will give excellent coverage and publicity to the expansion of aviation between men on our national defense needs but it is all too likely to underestimate the importance to commercial aviation of being given back the more right to do business efficiently.

There is not a branch of commercial aviation anywhere in the United States that is not being strangled by Federal red tape, regulations, manuals, rules and rulings.

General Smith put it in his usual concise manner:

"The continuing trend at toward the promulgation of more and more detailed regulations, contrary to the policy of the 79th Congress which asserted the present law, and contrary to best interests of air transportation."

"The burden of aviation regulation has become so great that it taxes the ability of the regulating personnel to supervise enforcement of the regulations they presently give, and most severely taxes the ability of those who must operate the air routes, management and employees alike."

"It is far to say that the excess assembly of detailed legislation will lead to greater vigilance on the part of au-

thor personnel to be kept safer than to act with initiative, and good judgment. There should be a reversal of Government policy with respect to the detail of aviation operational regulations. It should seek to attach additional responsibility to the air carriers and seek to take the Government from the field of detailed, mechanical operational regulation.

"It is, without doubt, fair to say that the United States has a heavier burden of detailed aviation regulation than any other country in the world.

"It is demonstrated that other forms of transportation can be regulated by the assignment of operating responsibility to the carrier, under sensible and well-policed policies, as in the case of rail and maritime commerce. There is no reason why similar policies would not be effective in air transportation—more effective, in my opinion, than the present system of rules, regulations, detailed, excess operating regulations."

We hope that the President's commission, and the Congressional air policy body as well, do not become so engrossed in top-priority deliberations of the systemic philosophy of international power politics that they overlook the mass of Government paper which restricts aviation and makes it an difficult to manufacture aircraft and to keep them flying.

It looks to us more and more as though one answer may be unification of CAA and CAB. The confusion in both agencies is increasing rapidly. Each has hired staff so completely on so many policy matters, that it feels it cannot look out with dignity. So each muddles on with compromises.

It may be time to start over again with a clean slate

every community in the state with 100 or more people here.

El Paso, which before the war had the world's biggest armature on a motor, will receive this and other markets and enlist the support of other West Texas communities in and near the Skyway and the 46 mile wide Skyway route utilizing additional workers, it was pledged at a dinner meeting.

Future plans call for probable suspension of the Skyway in CAA class, two main flights of private lines converging at Oklahoma City from the East and West Coasts, to treat the Skyway, and preparation of special Skyway 1 guides showing airport accommodations and other facilities for touring armies along the way.

This is encouraging news at a time when so many are bewailing the black future of personal aviation.

ROBERT H. WOOD

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